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Master' s Thesis of Visual Design

A Study on
Interactive Picturebook Design
for Animal Protection Education

동물보호교육을 위한
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A Study on Interactive Picturebook Design for Animal Protection Education

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Abstract

China has the largest market for illegal wildlife trade, a long history and the traditional culture of trading wildlife products. This culture resulted in the low awareness of reducing the demand of consuming endangered wild animals. This design proposal targets at Chinese users from 9 to 12 and tries to encourage users to think independently about illegal wildlife trade issues and reduce the culture and social influences that increase the wildlife products consuming demands on this age group's users.

To achieve the purpose, this study was conducted in four stages. The first stage is to develop an inspirational story content based on the facts in wildlife trade and the relationship of animal values and human psychological needs.

The second stage is to select the proper endangered animal information's for the targeted user group.

The third stage is to create multimodal contents with symbolic elements and abstract visual expression to determine the degree of emotional involvement and the distance between the contents and the users.

The fourth stage is to design the interaction and the reading experience for the targeted platform to create the rhythm within the picturebook and enhance the level of fun.

The design proposal is an interactive picturebook on smartphone devices. The main story is a fairy tale which talks about the consumers and criminals in the illegal wildlife trade and the in- and external motivations of their behaviors which work together and result in the expanding scale of wildlife trade. The design utilizes different multimodal elements to build the tableaux of the picturebook. Characteristics of print-based books, films, and smartphone reading contents were studied and combined to create the rhythm within the picturebook and enhance the level of fun.

This design proposal focused on the people involved in illegal wildlife trade, which helps readers to understand the motivations of the consumers and criminals and inspires people to think about resolutions from the aspect of people, culture and society. It also encourages readers to think independently about the illegal wildlife trade issues. The design proposal also combined the characteristics from different platforms to create the reading experience on the targeted platform.

Keyword: Education, Interactive Picturebook Design, Storytelling, Animal Protection

Student Number: 2015-22328

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Chapter 1. Introduction

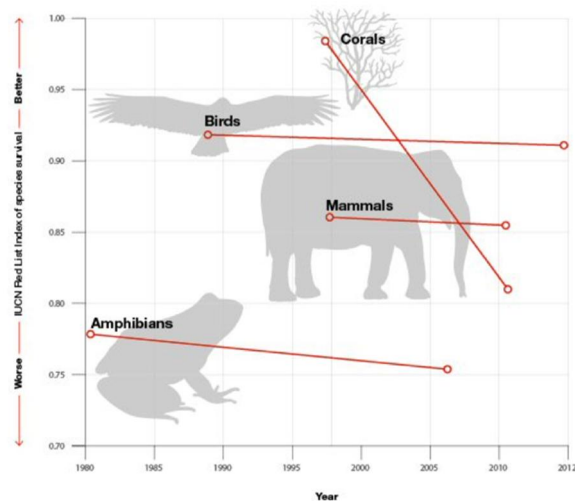
1. Study Background

1.1.1 Human and Animals

"He who is cruel to animals becomes hard also in his dealings with men. We can judge the heart of a man by his treatment of animals."

Immanuel Kant (Kant, 2013)

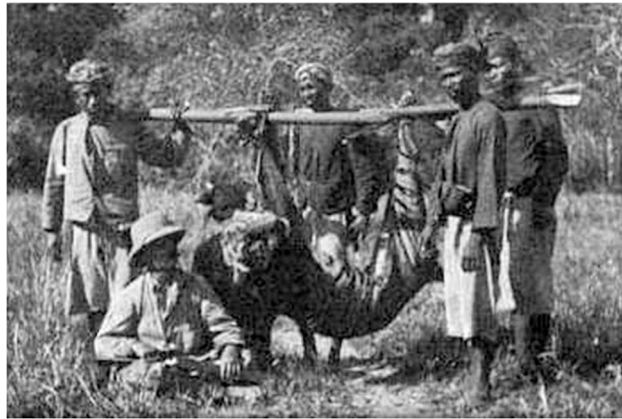
We live in a world surrounded by different species of livings and by the information we make every day, being part of the human beings and being part of nature gives us the responsibility to contribute in keeping the sustainability of both the human race and the world we live in.



<Figure 1-1> IUCN Red List Index of Species Survival

According to the IUCN Red List of Threatened Species, the numbers of endangered animal are increasing because of human activities. The global wildlife population has decreased by 52 percent between 1970 and 2014, according to a report by the World Wildlife Fund. As different researches and data suggest that the

modern animal extinctions are caused by loss of habitat, pollution, and human predation such as hunting and animal smuggling.



<Figure 1-2> The hunting party

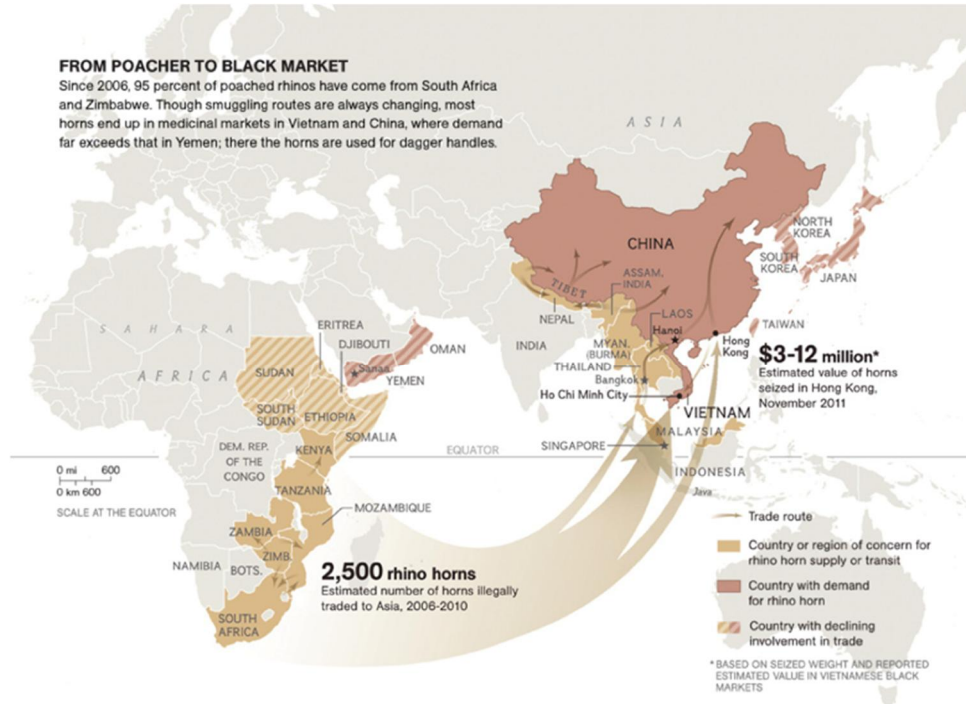


<Figure 1-3>Chinese wildlife market

The illegal wildlife trade is considered as the third crime in the world , harming wild populations of animals and plants and pushing endangered species toward extinction. Wildlife is traded as skins, leather goods or souvenirs; as food or traditional medicine; as pets, and in many other forms. Endangered animals and plants are often the targets of wildlife crime because of their rarity and increased economic value. ^①

^① U.S. Fish& Wildlife Service, <https://www.fws.gov/international/travel-and-trade/illegal-wildlife-trade.html> (Visited 2017/11/5)

According to related reports, over 2 millions of wild animals are killed because of illegal wildlife trade, including 300 thousand to a million marine mammals, leading to the decrease of wildlife population and the increase of endangered species.



<Figure 1-4>From Poacher to Black Market^②

Among all the countries, China is the biggest import country for wildlife recourses. In response to the increasing level of illegal wildlife trade over the last several decades, efforts from perspectives are made by different organizations, institutes, groups, and individuals.

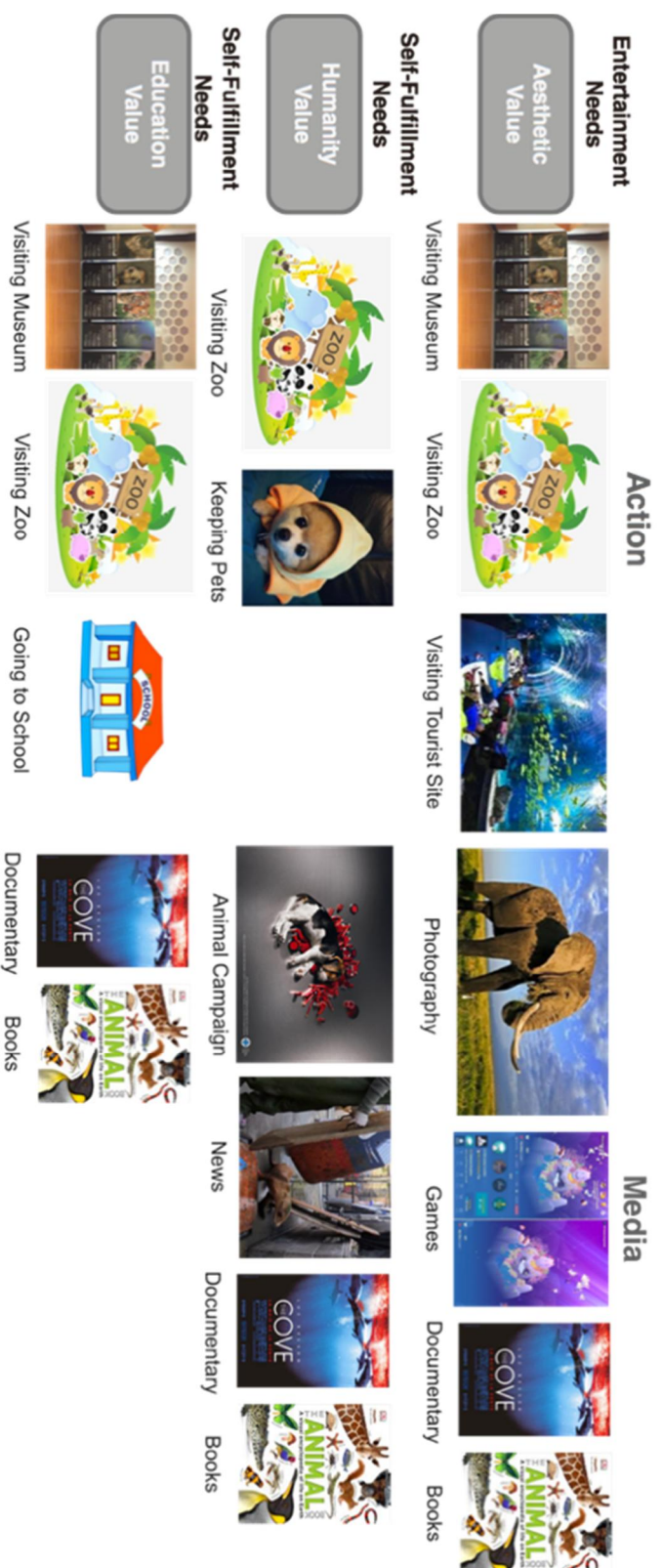
The efforts could be categorized into 4 categories:

- 1) Detect transit routes;
- 2) Strengthen forensic evidence;
- 3) Reduce consumer demand;
- 4) Tackle corruption.

^② Virginia W. Mason, Source:
 IUCN Species Survival Commission (SSC), African and Asian Rhino Specialist Groups
 ; Traffic; WWF; Wildlife Protection Society of India

According to U.S Fish & Wildlife Service, a majority of illegal wildlife trade is happening on a commercial scale, sometimes tourists participate in the trade by unknowingly buying or traveling with illegal items, often brought back as souvenirs or gifts purchased abroad. In illegal trades where wildlife is traded as food such as bush meat and pet, consumer demand is responsible for the expanding scale of illegal wildlife trade.

The efforts to arousing public awareness are often made in communication and education field. The following figure shows the existing media and activities for people to know about animals. As we can see that there are more ways to get close to animals from aesthetic perspective than the other perspectives.



<Figure 1—5> Existing media and activities for animal information

Example	Values	Advantages	Disadvantages
Advertising Campaigns	Humanity Value	Emotionally and Visually Impressive,	Lack of Information
Books	Education, Aesthetic, Humanity	Rich knowledge and Information	Reading time consuming, too many words
Games	Aesthetic	Fun, Highly Interactive	Lack of Information
Documentary	Education, Aesthetic, Humanity	Impressive, Rich Information, artistic value	Highest production costs
Zoo, Museum Visiting	Education, Aesthetic, Humanity	Providing experience, rich Information	Hard to remember, Need to Improve the smart device application methods

<Table 1-1> Comparison of the existing media

However, all those media have advantages and disadvantages. The advantages and disadvantages of advertising campaigns, books, games, documentary, zoo and museum visiting are being discussed and compared in the table above. The disadvantages show the problems in the existing designs. By summarizing the problems, a design proposal is proposed in the following paragraphs.

Example	Value	Characteristics	Problem Solved
Design Wanted	Education, Aesthetic, Humanity	Fun, Interactive, Emotionally Impressive Visually Impressive	Easy to remember, Low production costs, enough Information Help improving existing experience

<Table 1-2> The Wanted Design

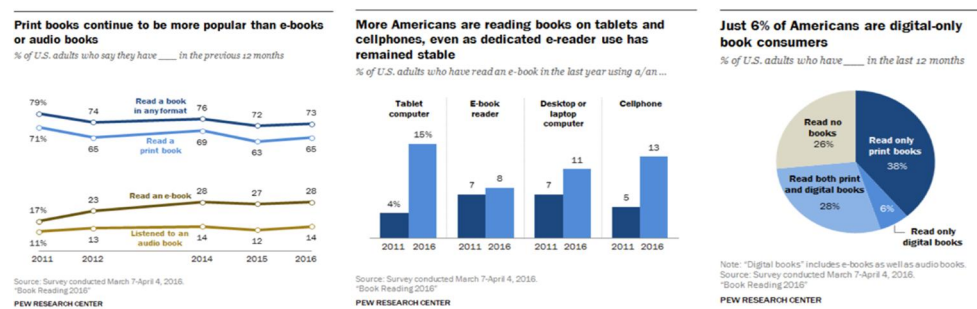
The analysis shows that there are few problems in the existing practices of animal protection education:

- 1)Hard to remember things after visiting museums and zoos;
- 2)Reading words and papers for information is time-costing and not interesting;
- 3)Some media have lack of emotional impact.

This thesis believes that a digital version of picturebook which provides both vivid pictures and a decent amount of information could be a suitable media for animal protection education. The design is made to be used on the smartphone devices as the smartphone is the most common smart device and users are now using smartphones every day.

1.1.2 Digital books and Paper books

Since the advent of electronic books, the number of e-books has been increasing rapidly these years. E-books could be read on computers and smart devices such as the smartphone, tablet computer, Kindle and other light-weight and portable platforms. However, research shows that the majority of readers still prefer to read the printed book. According to the Association of American Publishers, in January 2016, e-books sales were down 6.7% from the year before. Taking the preference of American people as an example, data shows that 89% percent of readers preferred reading printed books while 38% of them were reading digital books as well. Another survey shows that only 8% of readers were digital-only books consumers.^③



<Figure 1-6> Users' Reading Preference in 2016

^③ Statistic from PEW Research Center:
<http://www.pewinternet.org/2016/09/01/book-reading-2016/> (visit date:2017/9/20)



<Figure 1-7> Google Global Trends for E-book (from 2007 Oct to now)^④

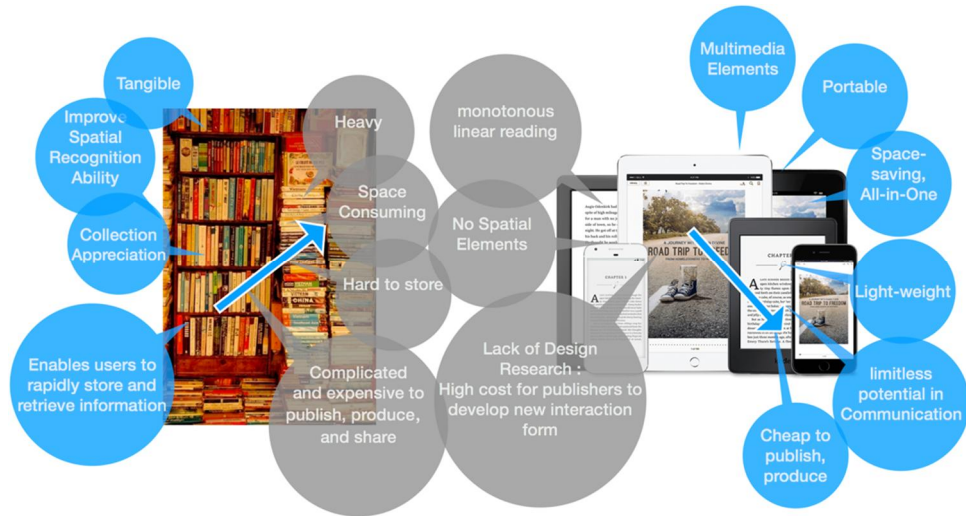
The graphic provided by Google Trends also reveals that in the past decade, people's interest for e-books grew rapidly till 2012, however, is showing a sliding trend since 2013.

The majority of readers are still in love with the form, texture and the experience given by printed paper. Yang (2015) mentioned in the master thesis *Variable Reality: Interacting with the virtual book* that "[...] the mere reading of dry texts on screens is insufficient to account for the entirety of the reading experience. Further, the physicality of a book and the way its numbered pages are put together in a sequential order allow users to access pages in a non-linear manner. Accessing information in the book in a non-linear fashion promotes the human spatial cognitive ability, which enables users to rapidly store and retrieve information[...]" .(Yang, 2015)

However, the number of the user of smartphones, tablet computers, and personal computers is growing year by year significantly. At the same time, digital platforms provide the convenience by being light-weight, space-saving and portable. Being able to access to multi-media and the internet also gives an unlimited and dynamic nature to e-books. The cost to publish and promote e-books is also more economical than the traditional form of books, which benefits the indie authors and small presses. Because of its limitless potential, it is urgent to improve the

^④ Google trends, <https://trends.google.com>(visit date:2017/9/20)

experience with the e-books or e-reading.



<Figure 1-8> Pros and Cons of Paper book and E-book

The picture above indicates the pros and cons of paper book and e-book. Paper book is tangible and enables people to collect and enjoy them, and the form of the book page and how they are put together allows people to recall the location of information in both linear (before and after) and non-linear (spatial) way.

However, paper books are heavy, space-consuming, hard to store. People have to cover complicated process and pay a certain amount of budget to publish, produce and share the paper books.

On the contrary, e-books are portable, space-saving, light-weighted, and have limitless potential in communication because of the fact that they could be shared and read in different platforms with ease, and also the fact that they are cheap to publish and produce.

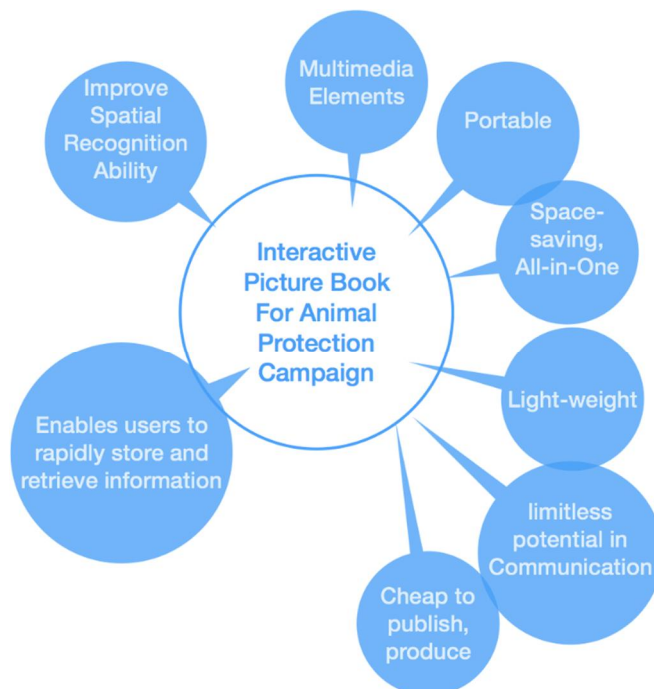
1.2. Purpose and Scope of Study

This thesis is inspired by the need to combine the benefits of e-books and printed books. This study is focus on interactive

picturebook, which is inspired on the image–reading trend on the Chinese Social networks.

Authors for Webtoon and Short videos and other works constitute the largest group of Information generators on the Internet. The group is called We Media. The basic elements including illustration, video with words or audio narration or HTML5 interaction. The popularity of the We Media shows the impact and potential of image–reading on smart devices. People prefer to acquire information through vivid but carefully designed pictures than words or normal graphics.

The recent design trend for smart devices also reveals the trend that illustration, motion or interactive graphics and images are taking the role one of the most important information carriers in the internet.



<Figure 1–9> Purpose of the thesis

The purpose of this study is to 1) combine some of the characteristics of paper books to enhance the interaction in digital

books 2) investigate how pictures and narration could be read as the form of book by being interactive, and how to take advantages of this characteristic to make effective media for the animal protection education. The design practice with the theme of animal protection is to see how it could be involved in the promotion process of animal protection or other non-profit activities by sharing information through visual design.

1.3. Outline of Study

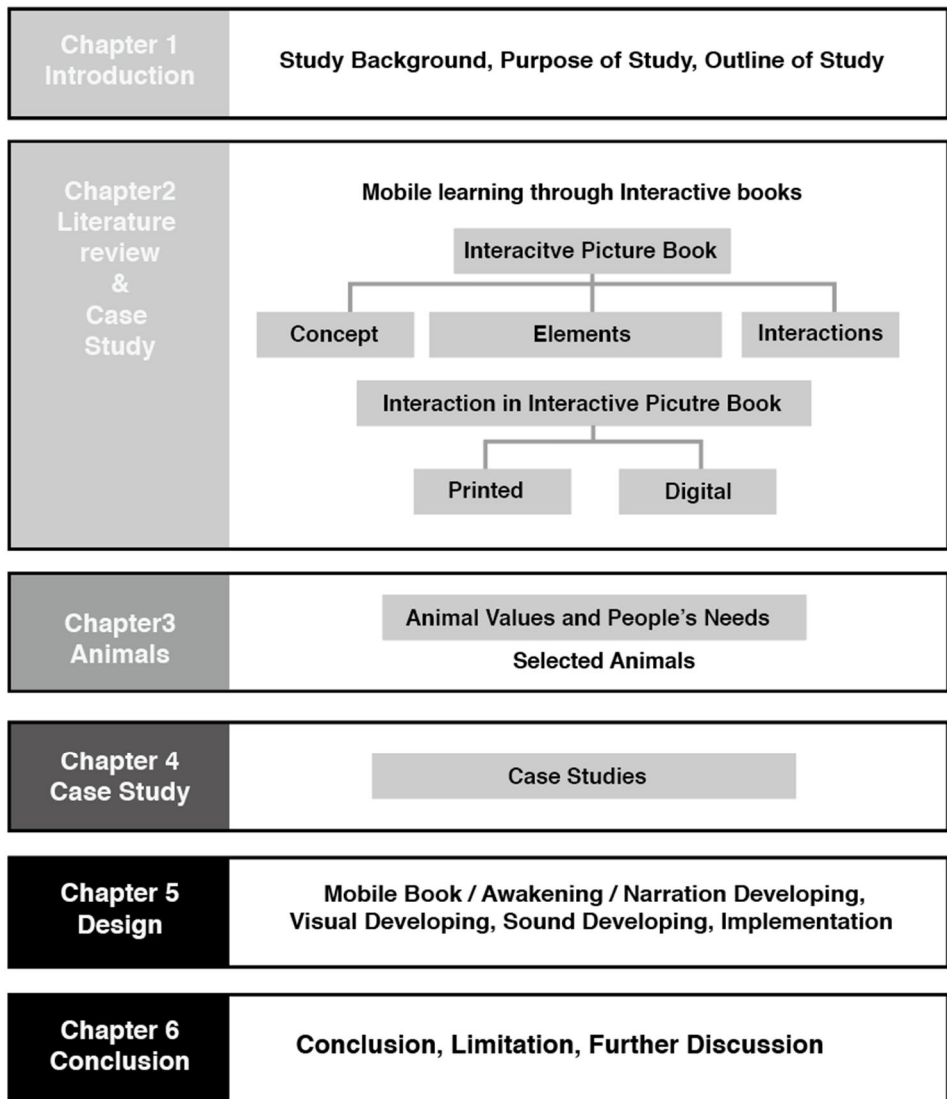
First step of the thesis is to define concept of an interactive book and the purpose of improving the interactive book design. Chapter 2 covers a theoretical design framework for an interactive book design for both smart and printed media. The purpose is to find a design method that is useful for image-based books. The design method for interaction, storytelling will be developed in Chapter 2.

Second step is to study the method and perspectives that is commonly used to apply design or other kind of media in the field for animal protection. This Chapter covers the motivations of people participating in animal protection activities.

Case study over successful digital picturebook is covered in Chapter 4 in order to find the advantages and disadvantages in the existing design cases.

The following step is the design outcome. The goal of this design project is to perform an alternative of how design could be involved in the promotion process of animal protection or other non-profit activities for sharing information through visual design. First part of the design is to find the proper design contents for the design project. Desk research is held of finding the stories, issues,

status, news and knowledge and other information to support the design project.



<Figure 1-10> Outline of Study

Chapter 2. Interactive Picturebook

2.1 Mobile learning through Interactive books

The study focuses on smartphones, as they are light-weight, portable, and are used frequently in the fragment time. The story with animal protection education contents is often promoted in the scenarios like visiting museums, zoos or viewing advertisings. In those scenarios, users can use mobile devices to access the story contents easily by using smartphones.

Children literature like fairy tales and fables could influence the process of child' s individuation and help children to deal with the troubles and conflicts in their growing process. Reading those stories, analyzing and understanding the characters and the relationship of the characters help children to understand the problems and conflicts in their real life. Role play is considered as an effective way of analyzing the stories(Zhongli, 2010). The form of interactive picture book serves as a method for the target users to participate in the scenes of the story, the users read through the textual context and interact with the story elements. The process of engaging in a story helps users to think about the conflicts in the story and their real life at the same time.

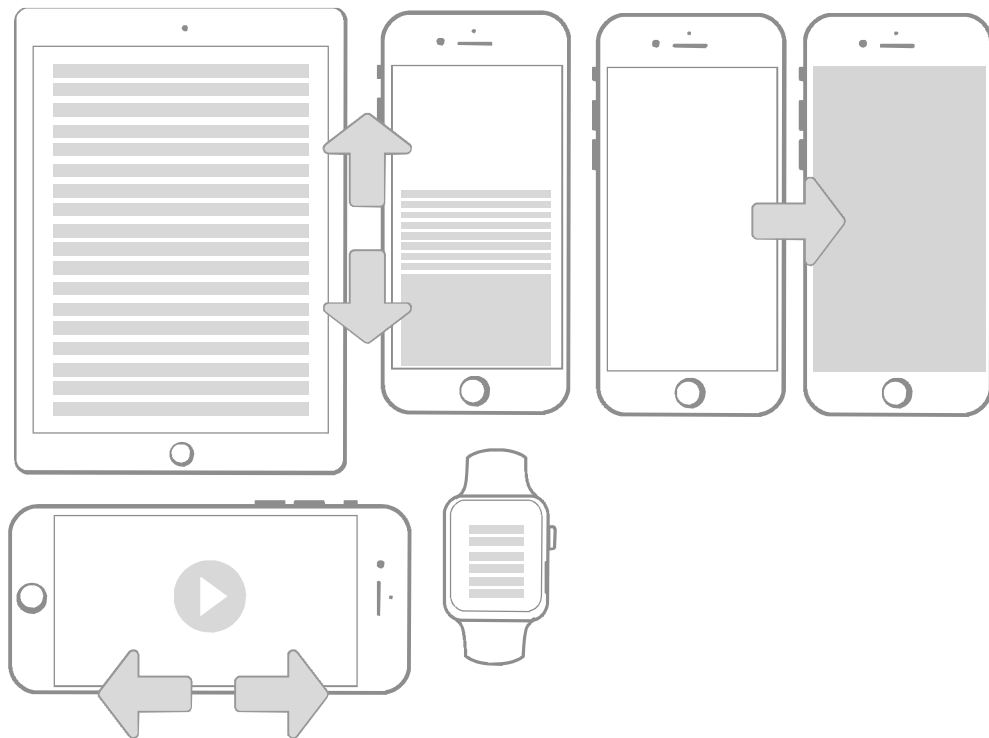
2.2 Reading on Screen: Linear and Non-Linear Reading in Digital Devices

The role of images and text played in the organization of text employs different reading paths to produce different kinds of reading experience.

Usually in the digital world users are reading in two kinds of paths: linear reading path and non-linear reading path.

The linear reading path is defined clearly in Literacy and Gender: Researching Text linear reading path sustains a fixed sequence to the order in which the text must be read over some length. The linear reading path is commonly used on smart devices like mobile phones. Reading experience on small screens usually tends to let users read from the begin to the end by scrolling or wiping to change pages.

Linear reading is also the main path of reading when people are getting information from We Media. Typical linear reading media are most of the e-books, long images such as Webtoon, Video, where the reader is led to assume cause-and-effect sequences.



<Figure 2-1> Linear-reading on smart devices

Ronald Robberecht(2007)^⑤in his paper *Interactive Nonlinear Learning Environments* describes two types of linear path design: two-dimensional linear design and three-dimensional linear design.



<Figure 2-2> Examples for two-dimensional linear reading

Examples for two-dimensional linear reading are non-interactive e-books, blog articles, Webtoon and other forms of information designed for cell-phone reading. The flow of information from the start to the end is determined in the text so the user has to follow the predetermined reading path to obtain the whole message. Because blog articles and Webtoon are relatively short, this kind of design simplified the reading process. It is not suitable for all kinds of passages which are relatively long. However, the net-fiction authors who published most of their work on websites always have a developed linear narrative structure which allows readers read through a respectively long (over 1,000,000 words) with ease.

Three-dimensional linear reading path design may have some non-linear elements, because every page may include some additional information like definitions, comments using hyperlinks or pop-ups. But readers still have to follow the same reading path from the start until the end. This is commonly seen in games with a

^⑤ Robberecht R. Interactive Nonlinear Learning Environments[J]. Electronic Journal of e-learning, 2007, 5(1): 59-68.

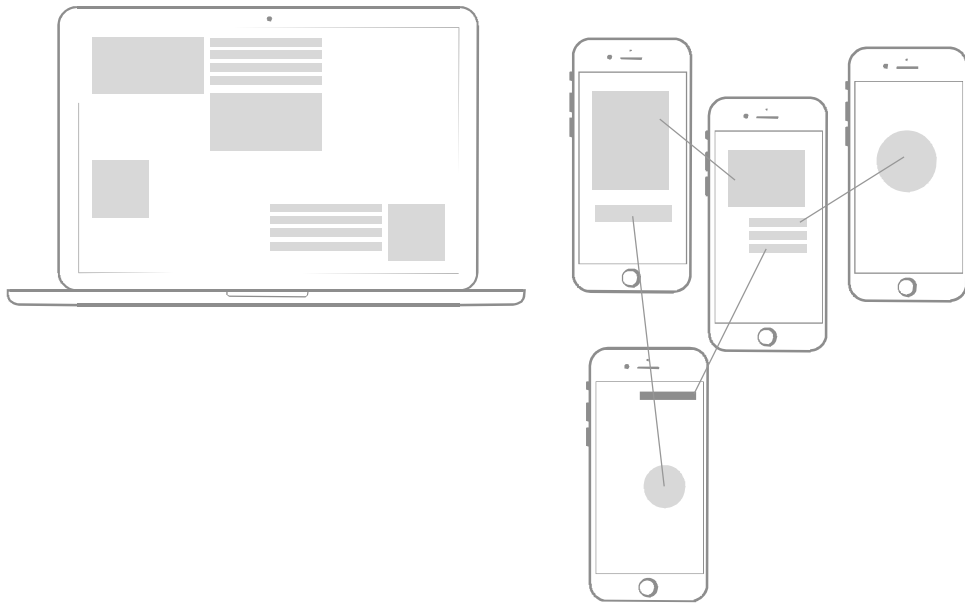
certain passage of narrations before gameplay which is usually led by animation or a sequence of scenes and the scripts with words or played by voice actress and actors. The users have to click to go through each scene or watch the animation to get the information from that narration. Usually, games provide a skip bottom for this kind of narration if the narration is relatively long.



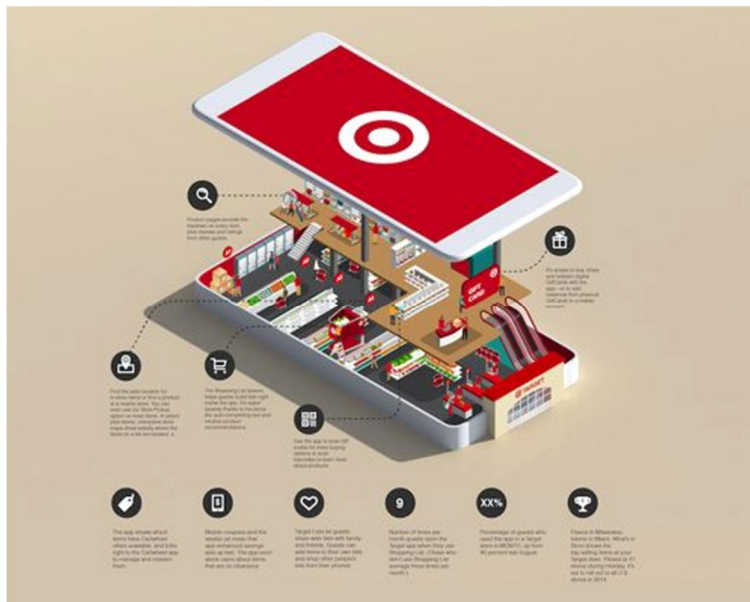
<Figure 2-3> Three-dimensional narration in mobile game Fate/GO^⑥

Non-linear reading path allows users to view the information according to their own preference and interpretation, because there is no limited path for people to follow, although some information might be emphasized to grab user's attention.

⑥ Fate/Grand Order is an online free-to-play role-playing game based on the Fate/stay night visual novel game and franchise by Type-Moon.



<Figure 2-4> Non- linear Reading Path



<Figure 2-5> Non-Linear Reading Media

Users can take any entry point and move wherever they like. That means that the texts should be understood in any order.

Kress (G. Kress, 2003) argues that this different mode yields a different affordance, the visual image allows for open interpretation.

A concrete example might be most of the web design for tablet computer or pc, games, and infographics. In such multi-modal texts, the reading path is much less linear and more open to the reader's interpretation.

Also, Yang (Yang, 2015) suggested in her thesis that physical books and the way its numbered pages are put together in a sequential order allow users to access pages in a non-linear manner. Accessing information in the book in a non-linear fashion promotes the human spatial cognitive ability, which enables users to rapidly store and retrieve information.

Non-linear reading path usually requires the designer to prepare contents in a form of information units instead of sequential pages of text. Many infographics tend to present information in a non-linear fashion. Ronald Robberecht (Robberecht, 2007) suggested that an information unit usually consists of:

- 1) a clear headline with key words to clearly explain the main idea;
- 2) short summary or explanation for the readers to get an overview of each unit;
- 3) attached more detailed information source, which can be hidden until it is needed.

Hidden the detailed information is an essential way to handle information overload. As non-linear reading path usually have a lot of images and words, it is important that attached contents are prepared in an easy to digest format to avoid information overload.

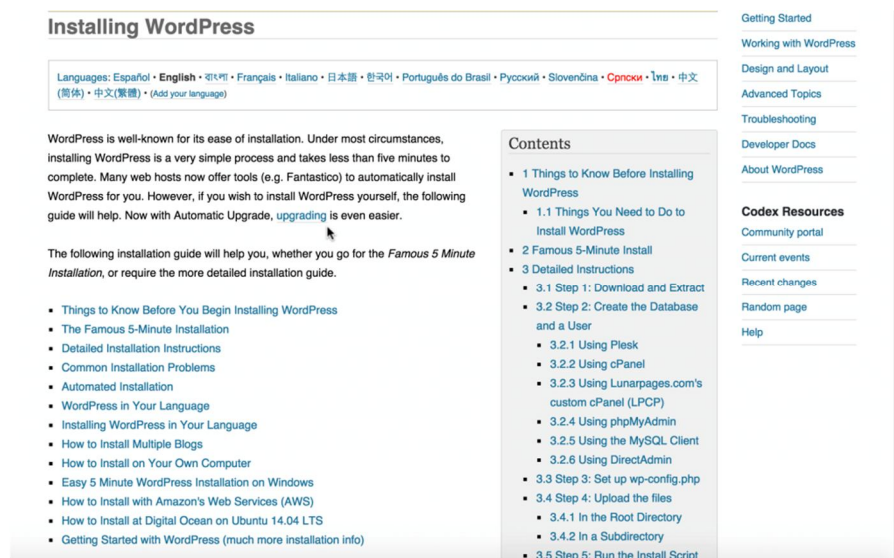
According to Mayer and Moreno (2003) there are different principles to reduce cognitive load. Their research shows that audio narratives reinforced with visual elements significantly increase learning rates and knowledge retention. Which means to create

short, bite-sized information that are supported with visual, audio elements instead of plain text.

However, problems arise from separating information into units. The first problem is the lack of distinction between units and display. Sometimes there isn't a clear distinction between each unit and the presentation. So, it is very important for the designers to design the detailed information unit and how those units are put together^⑦.

Another problem is sometimes information is stripped out from its needed context. The information unit no longer makes sense as standalone information and require a lot of outside reading to make sense of them.



Mark Baker's Every Page Is Page One provided another list of suggestions for non-linear reading. He suggested that information should be sorted into topics and each topic should be self-contained so that a user can start anywhere with the help of context and links.



<Figure 2-6> Example of self-contained: WordPress Installation Manuel

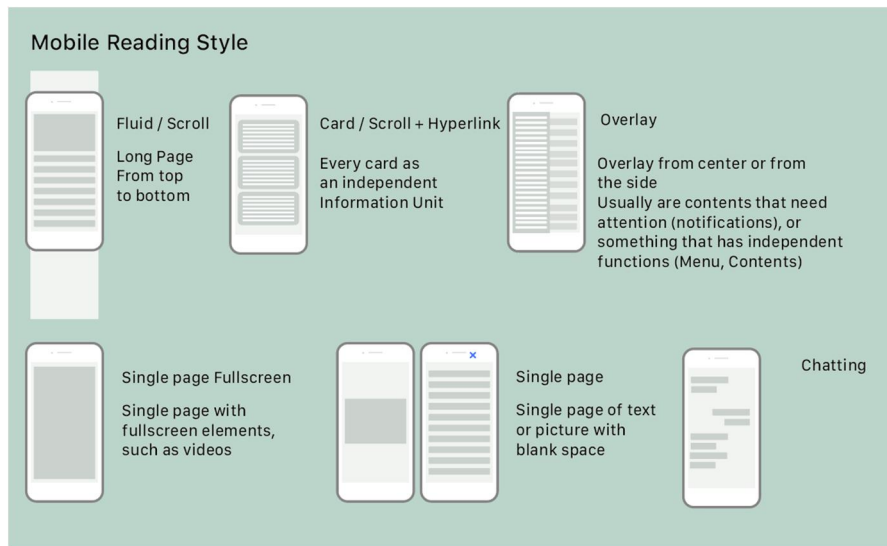
^⑦ Tom Johnson, how to design documentation for non-linear reading behavior

Here is the comparison and summary for the discussion above.

Category	Linear		Non-Linear	
Path	Predetermined		Determined by Users	
Types	2D	3D	Units	Page One
Characteristics	Simple	Rich Elements	Simple Context	Complicated Context
Suitable Information	Short text, videos, Story led strong cause and result or before and after relation, such as long stories led by the flow of time, Character or Background Introduction, Webtoon, History topics		Information that contains units or topics that need to be friendly to access in any order, like manuals, indications, introductions, Stories led by spatial concept or stories with multiple branches	
Advantages	Simple Flow, Simple Interaction, Simplified for mobile platform Easy to build		Easy to reach and retrieve information, enriched ways of interaction Easy to Engage	
Disadvantages	Lack of information efficiency		Informational Overload Hard to build	
Story Examples				

<Table 2-1> Different Reading Path and Comparison

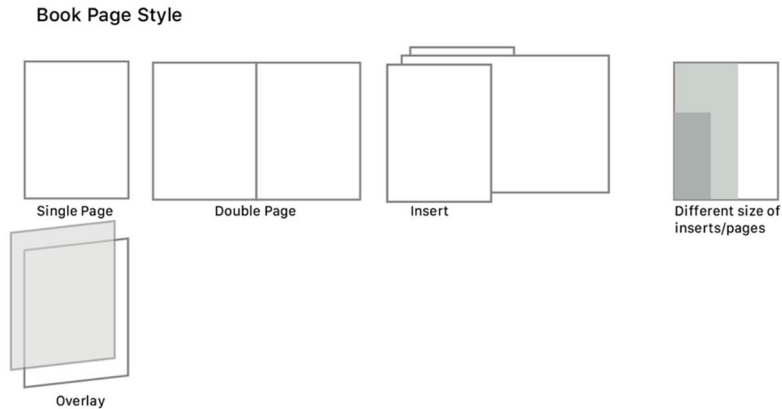
Non-linear and linear reading could be seen in many media. The three media that would be referred to this paper is mobile phone reading style, book page design, and film.



<Figure 2-7> Mobile Reading Style

The most popular reading style in mobile phone and film are linear reading. In films, the contents are viewed by the viewers following the order of time. Long take and short take provides different rhythms. A long take often illustrates the continuity of the movement, time, atmosphere and other slight continuous senses the director wants to share in the film. On the contrary, short takes focus on the tempo and process between take to take.

In mobile phones, the most popular design style is fluid style, which orders different contents in a linear fashion just like flowing waterfalls. This kind of interaction is friendly for small-screen devices as it allows both interaction and layout to be simple.



<Figure 2-8> Book Design Style

In paper books, viewers are able to read the contents are both in linear and non-linear fashion, as they could jump through one page to another page at will. However, additional brochures, large or small sized insert page, spread pages can provide different tempos of reading.

2.3 Features of interactive picturebooks

The history of combining iconic and conventional signs have existed in human culture from its beginning in these two parallel types of communication, the visual and the verbal. A growing number of art forms and media make use of different combinations of the verbal and the visual signs: Chinese scroll, Egyptian mural paintings, theater, cinema, video, comics, apps, games, and also picturebooks. (Nikolajeva & Scott, 2013)



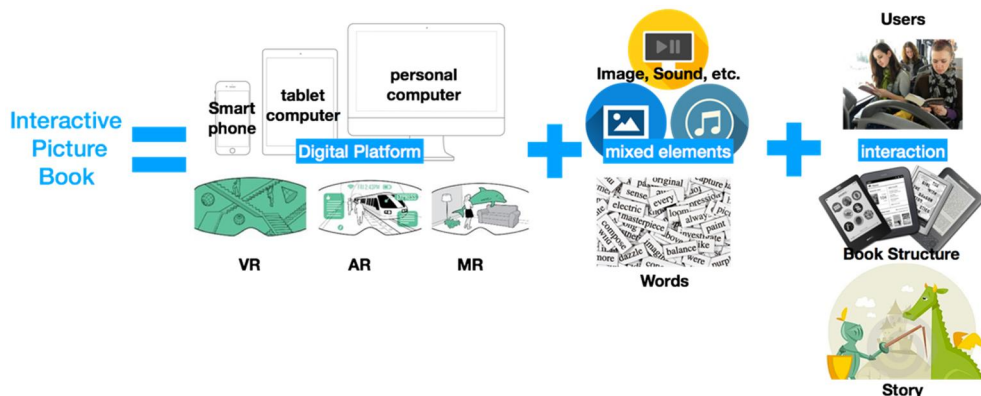
<Figure 2-9> Chinese Scroll and Egyptian Mural Painting

Nikolajeva and Scott (Nikolajeva & Scott, 2013) pointed out in their work that the unique character of picturebook as an art form is based on the combination of two levels of communication ,the visual and the verbal.

Like other multimodal texts, the contemporary picturebooks have been impacted by the digital revolution and the affordances of digital reading devices (Serafini, Kachorsky, & Aguilera, 2015), especially computer PC, tablet PC and smart phone.

While print–based books are being published to digital platforms, many new digital picturebooks are being created that no longer begin as print–based books. The digital platforms contain smart phone, tablet computer, personal computer or even digital stand–alone interaction installations, VR, AR, MV technologies are also used in those platforms.

Interactive picturebooks designed for digital platforms usually have multimedia contents and interactive elements between users, story or book structure.



<Figure 2–10> Concept of Interactive Picturebook

In a research conducted by the Institute of Art Education at University of Munich[®], a picturebook with the interactive elements

[®] Kothe et al. (2016) Art Education in the Digital World. A picturebook as app

of a game was developed and tested on a group of third grade students. It combines elements of reading, hearing, pictures, interaction, game and art. Research proved that an interactive picturebook, especially the book–game, is more than an aesthetic object.

Kothe et al. (Kothe, Buchwald, Tausch, Mohr, & Hußmann, 2014) suggested that interactive picturebook is an aesthetic experience with 5 elements: ludological, narratological, visual, acoustic and social elements. The experiment with third grade students proved that an interactive picturebook is able to create new creative–aesthetic experiences.

Unlike traditional e–books which are now basically sold and read on secondary–platform such as Amazon or iBooks, the interactive picturebook discussed here is as a stand–alone application or website, which enables multiple ways of interactive, and the authors and publishers are also able to update the contents.

Schwebs (Schwebs, 2014) suggested that although a digital version of picturebooks may share resembles with print–based picturebooks, digital picturebooks could provide access to web–based resources, navigational features, and types of interactivity that print–based picturebooks do not support.

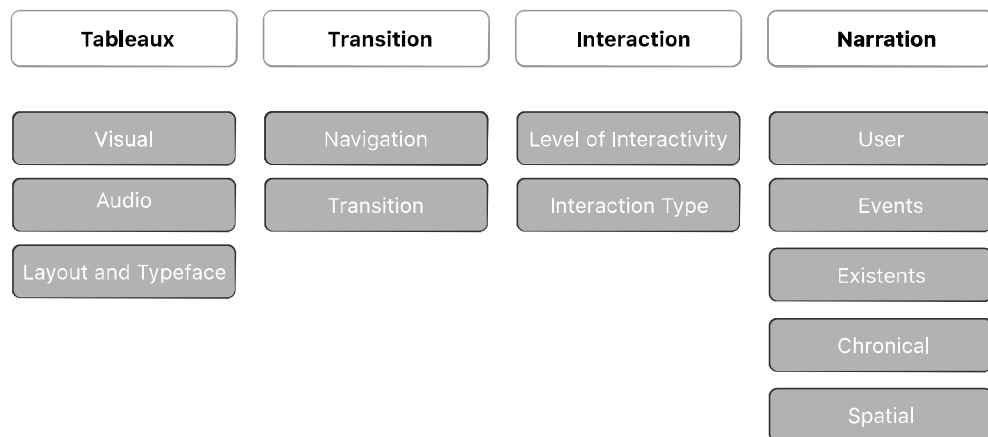
Serafini et al. (Serafini, Kachorsky, & Aguilera, 2016) suggested that interactive picturebooks have three features. Tableaux feature, transitional feature and interactive features. Tableaux features are those features that are available for a particular opening or screenshot. In picturebook apps, the tableaux work in similar fashion to the double–page spread in print–based books. Transitional features are those features that allow readers to navigate from one screen to the next as they proceed through the narrative. Interactive features offer enhancements to the visual and

verbal narrative and may be linked to other content and media available on web-based platforms.

Serafini et al. (Serafini et al., 2015) suggested that visual, aural, textual, paratextual, navigational, and transitional features could be the 6 trans medial features people could look at when evaluating a digital picturebook:

- 1) Visual: Illustration, Film, AV etc.;
- 2) Aural: Diegetic and non-diegetic sounds;
- 3) Textual: Typeface, Layout;
- 4) Paratextual: Front and back covers, title page, etc.;
- 5) Navigational: How to navigate through the picturebook , like navigational icons;
- 6) Transitional: Transitions between tableau.

Summarized from above, this thesis developed this analytical framework for interactive picturebook to cover the main elements that should be considered in the evaluation and design process of an interactive picturebook.



<Figure 2-11>Interactive Picturebook Framework

- 1) Visual: graphics, illustration, film and other elements that construct the body of a Tableau. Visual elements have two main features: a) Visual grammar features that are used to organize

and compose visual images; 2) Aesthetic features associated with how art styles and movements affect the way we look at and comprehend visual images.

- 2) Audio: Diegetic and non-diegetic sounds;
- 3) Layout and Typeface: Typography, borders, orientation, motifs, and interplay of text and image
- 4) Navigation: How to navigate through the picturebook , like navigational icons; UI structure and elements;
- 5) Transitional: Transitions between tableau.
- 6) Level of interactivity and Interaction type: how much the user get involved in the book reading, what kind of activities the book provides;
- 7) Narration: The role of user, main events, existents (Characters, Settings); Length of the Story; Space

The following chapters explain different elements and attach related design theory and researches.

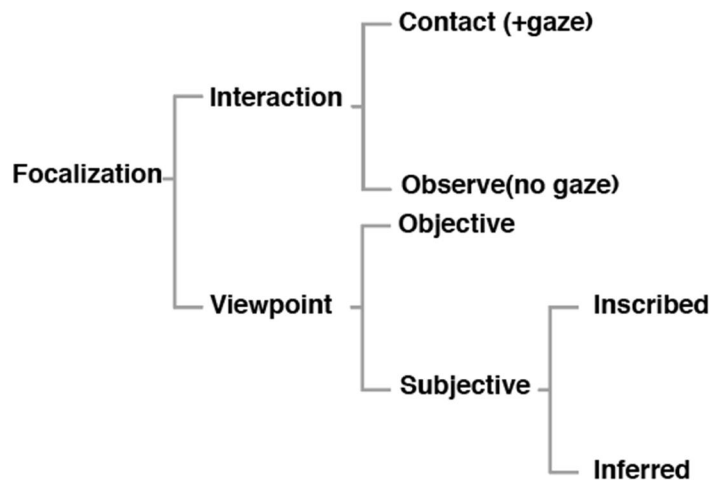
2.4 The Visual Grammar Features

Kress & van Leeuwen (G. R. Kress & Van Leeuwen, 1996) provided in their work *Visual Grammar* the detailed framework for analysis the storytelling and discourse in a single image.

Clare Painter, James R. Martin and Len Unsworth (Painter, Martin, & Unsworth, 2013) developed a framework for visual narrative analysis for visual narratives composed of a series of pictures like picturebooks based on Kress & van Leeuwen in their work *Reading Visual Narratives: Image Analysis of Children's Picturebooks*.

Painter et al. (Painter et al., 2013) uses focalization, pathos, ambience and to describe the interaction between viewer (reader) and the visual storytelling.

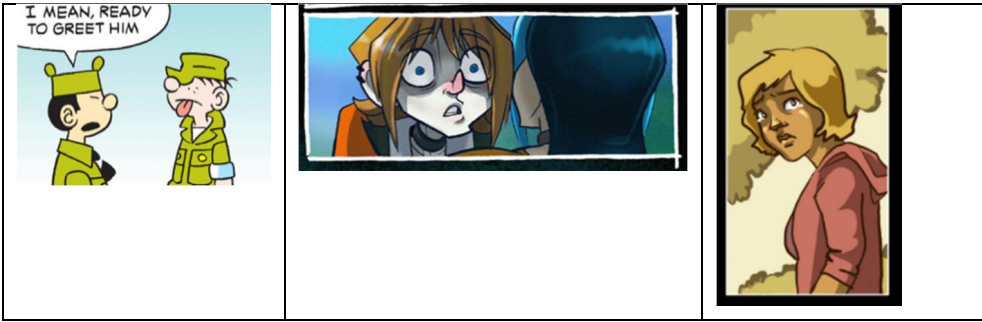
In focalization, it defines the relations between viewer and image determined by eye-contact and viewpoint. Whether the viewer is contacting or observing the characters in the image depends on if there is eye contact or not. As for viewpoint, Painter et al. (Painter et al., 2013) divided the imaged as mediated and unmediated, which are similar to objective shot and subjective shot.



<Figure 2-12> Focalization(Painter et al., 2013)

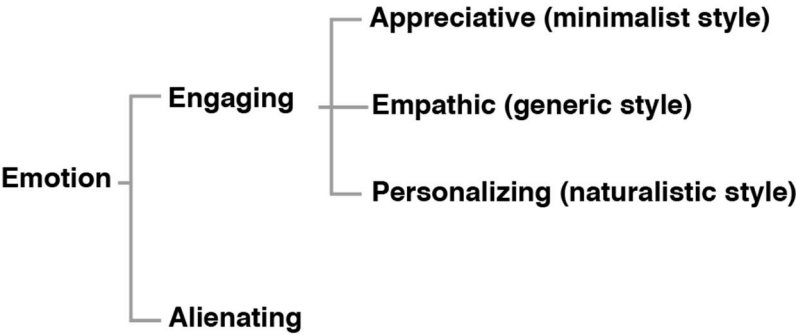
In objective viewpoint, the viewpoint of the viewer or reader is different from the characters. Inscribed subjective viewpoint means that the reader is looking at one character with another character (in the image)' s viewpoint. The inferred subjective viewpoint viewers are taking the character' s viewpoint from a first-person experience.

Objective	Inscribed Subjective	Inferred Subjective
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<Table 2-2> Examples of Viewpoint

Painter et al. (2013) noted that the level of abstraction not only create the images' modality but also create the emotional interaction between the viewer and the image. The emotion is divided in to engaging and alienating. For alienating viewers or readers are viewing the image in an objective and critical way, for example, diagrams. For emotional engaging, there are three types: appreciative (minimalist style), empathic (generic style), personalizing (naturalistic style).



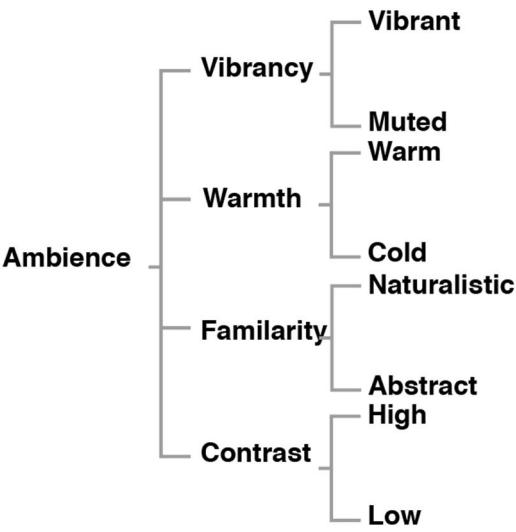
<Figure 2-13> Emotion

minimalist	generic	In between	naturalistic

<Table 2-3> Examples of different types of visual representation of crying

Different types of visual representations of crying are shown in table 2–4. The degrees of emotional engaging are represented in the graduation of grey. The less abstractive the image is, the stronger emotional connection people could have between the characters and themselves.

Painter et al. (2013) use the framework of *ambience* to explain the function of color in constructing the emotional motif. The *ambience* is divided as *activated* and *denied* (pure black or pure white). However, from the Japanese black and white comics, we can see that the contract between black–white also carries emotional information. Here is the developed framework from Painter et al.’ s *ambience* system.



<Figure 2–14> Ambience

2.5 Applying Transition and Interaction forms in print–based book to Interactive Picture Book Design

The page turn creates a sense of drama or tension as elements of the narrative unfold and readers are delighted as new openings are revealed. (Serafini et al., 2015)

Interactive books are not only on the digital platforms. The print-based books also have multiple interaction forms, for example, movable books, coloring books, augmented books, books with reading tools such as a polarizer.

Moveable books perform in different kind of forms, covering pop-ups, transformations, tunnel books, volvelles, flaps, pull-tabs, pop-outs, pull-downs, and more, each of which performs in a different manner. Design and creation of such books in arts are sometimes called "paper engineering". Movable books are commonly seen in children's early education books.

Coloring books are popular these years, the target users group are not only children but also grown-ups. By coloring the line artwork in books with various themes like inspirational stories, animal, fashion, and other welcomed contents.



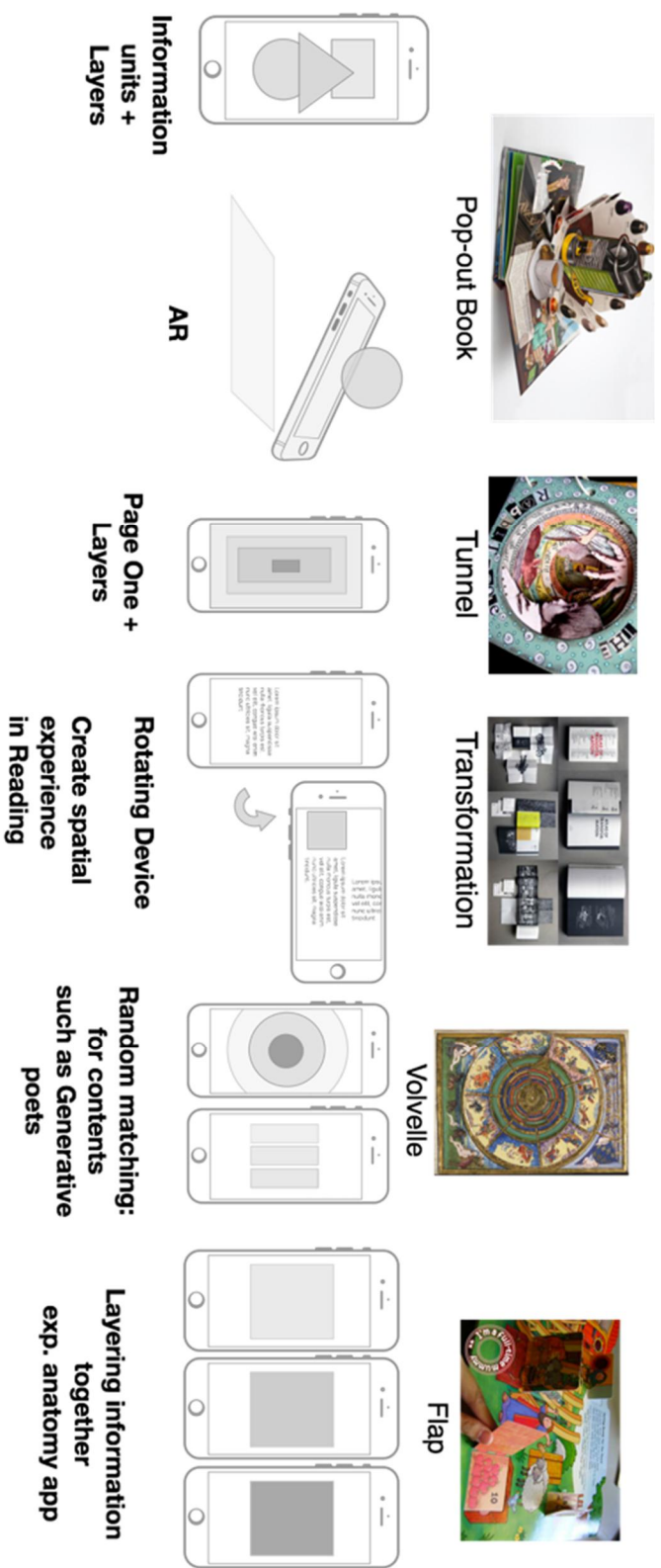
<Figure 2-15> Coloring Books

Books with tools are commonly seen in the genre of detective stories and detective book based board games and art books. Tools like polarizer are used to reveal hidden messages, in art books it will also help the artist to present multiple layered images and moving images on printed media.

Style	Common Theme	Characteristic
Pop-up	Fairy tales, Early Education	Emphasize the main subject, decorative

Trans- formation		composed of single, printed sheets
Tunnel	Fairy tales	Multiple layers, Space, decorative
Pull-Tab	Greeting cards	Switching between two pictures
Volvelle	Cosmos map , fortune telling	Disc style , move like wheels, matching information
Flap	Children fairytale, ABC books	Easy to make, emphasize some specific area
Coloring books	Chick soup to soul, fashion, nature	Targeting at Grown-ups
Book With tool	Board game, detective book, artistic books	Multiple layers on one paper, “moving” image, magical effect

<Table 2-4> Tangible Interactive Styles in Movable Books



<Figure 2-14> Design Application

Chapter 3. Animals

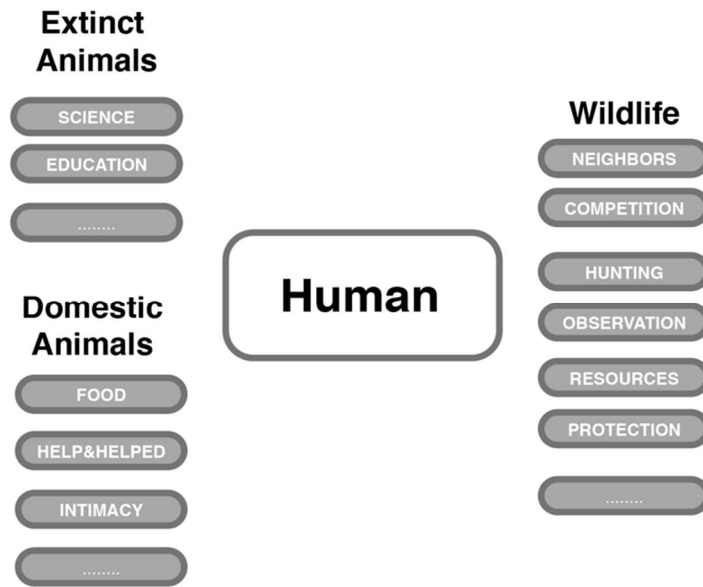
3.1 Animal Values

The demand or the motivation of design for animal protection also show in the rising concern from the public. Recent trend topics in Chinese social network Weibo shows that an increasing number of people are starting to be interested in information related to knowledge of protected animals, and also paying attention to issues related to animal poaching, smuggling, and the survival threats of loss of habitation to endangered animals.



<Figure 3-1> Screen shot of recent Hot Animal Topics on Chinese SNS Weibo

The result or benefits of protecting other species to the survival of the whole human race need to be proved on a huge timescale. However, there are many foreseeable benefits and values from the action of protecting animal resources. Various literature and plenty of facts suggest that animals and human beings have close connections. The relationship could be briefly summarized in this following graphic.



<Figure 3-2> Animal – Human Beings Relationship

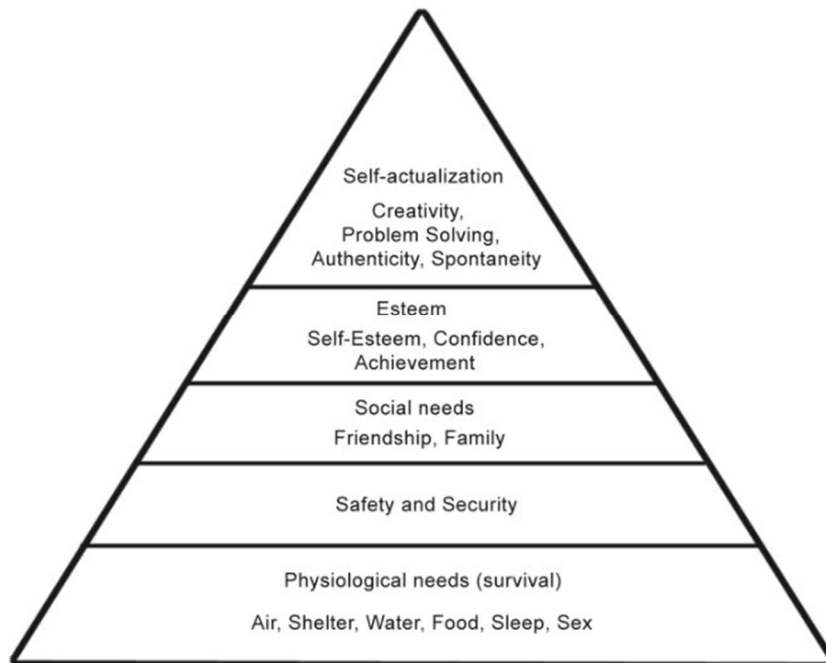
King R.T. (King, 1966) mentioned in his work that animals' value to humankind could be sorted into 7 kinds of values, respectively the economic value, entertainment value, biological value, education, science and philosophy value (E, S, P), aesthetic value, society and humanity value (S, H), negative value.

Value	Meaning
Economic	Humankind can get resources from their hunting, fishing, raising behavior. The region with wild animals can develop tourism projects like hunting, fishing, whale watching.
Entertainment	Humankind gain pleasure and entertainment through capturing, raising and observing animals.
Biological	Animals, especially wildlife played no negligible and irreplaceable function in maintaining the balance of ecological system
E,S,P	studying wild animals not only contribute in biology, but also contribute significantly in anthropology and social science. Many famous evolutionary psychology cases come from the study of primates.
Aesthetic	Animals are the frequently depicted objectives in art and literature works, and they are also the appreciate objectives in travel and tours. The aesthetic value of wildlife enhances when people are getting more and more familiar with them. In other words, the more you know about the animals, the more you can appreciate their beauty.
S, H	If one place becomes tourism spot, the public facility will be developed, and if the tourists get satisfied in their tours, they

	will be healthier both mentally and physically.
Negative	Wildlife also have negative effects on us. For example, in Tibet the wild animals and the domestic animals compete for pasture and grass.

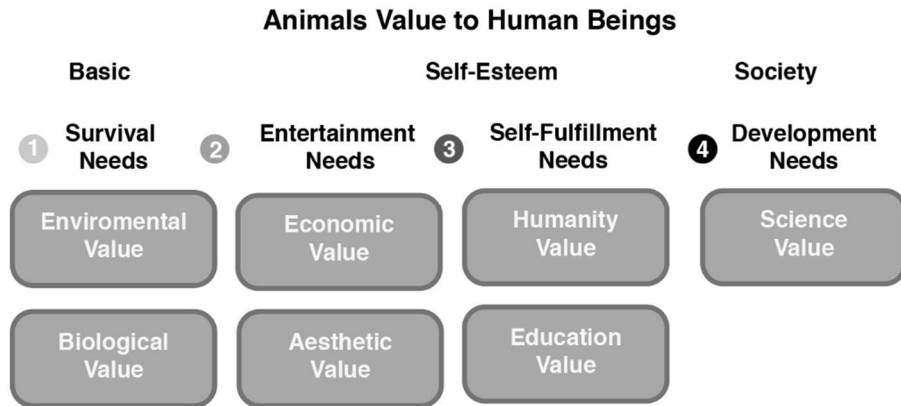
<Table 3-1> Animal Values from King R.T.

The reason that people would be attracted by animals' values could be explained by a hierarchy of needs adopted from Maslow's needs model. In Maslow's Hierarchy of Needs (Maslow & Lewis, 1987), people's needs are categorized into 5 levels: physiological needs, safety needs, belongingness and love needs, esteem needs and self-actualization needs.



<Figure 3-3> Maslow's Hierarchy of Needs

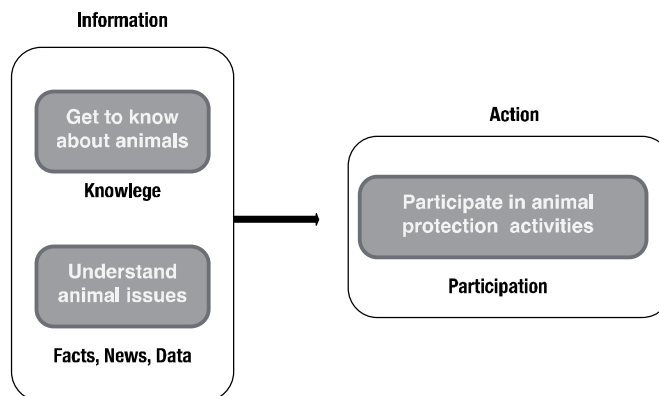
People are also commonly believed that beyond self-actualization, there's needs and concern for others, even as the whole society or even the human race. Animals values could be categorized under 4 needs that could be satisfied by the corresponding values.



<Figure 3-4> Animal Values and Human Needs

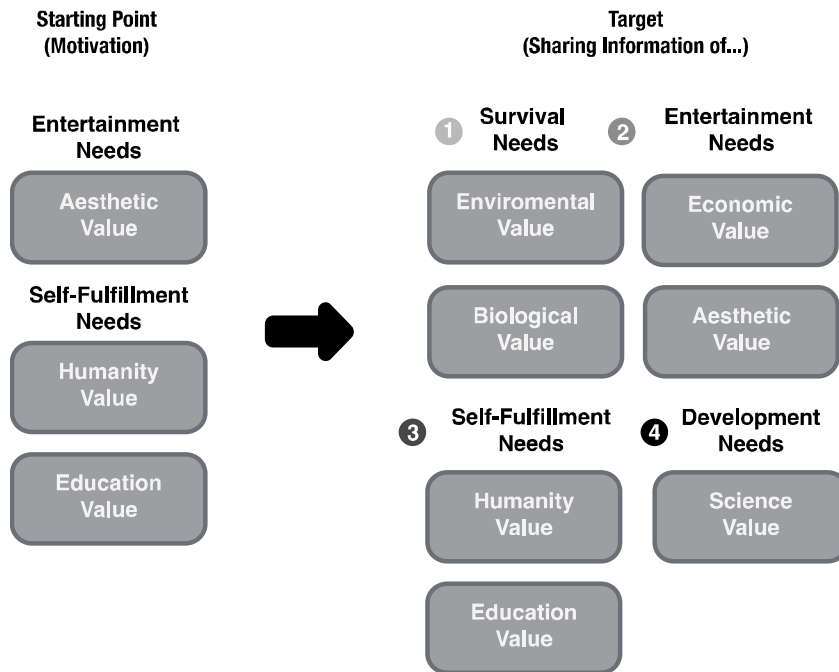
Because of those foreseeable benefits and values from the action of protecting animal resources, it is meaningful to protect animals. Understanding these values are important motivations for people to participating in animal protection. One purpose of this design is to develop the interactive app that helps people understand more of those values in a fun and simple way.

How people start to help animals?



<Figure 3-5> How people start to help animals

The basic behavior pattern of people starts to do and participate in something is from knowing to doing.



<Figure 3-6> From and To in Animal Protection

The process of people getting to know also have two stages. People usually start to gain knowledge of animals for three reasons: aesthetic reason, humanistic reason, and educational reason.

For the aesthetic reason, people understand animals by enjoying animals' aesthetic value, for example, tourism, photography, cartoon, and comics.





The humanity value of animals shows from the empathy people will get from animal advertising campaigns, news, the emotional fulfillment gained from pet caring, and other emotional connections.

The educational reason to understand animal is the common-sense education people need to get a better understanding of the world of them self by studying about the life and death of the Others.

During the activities based on the three values, people are able to know the information about all the other values.

3.2 Animal References in Design

Different animals were selected from IUCN red list and CITES Appendix based on the news reports and IUCN information.

Animal Images	Theme
	<i>Hippotragus niger variari</i> CR, Appendix I Illegal capture and transport for wildlife ranching remains a constant threat, given the high price that any specimens would command. ⁹
	<i>Loxodonta africana</i> VU, Appendix I Poaching for ivory and meat has traditionally been the major cause of the species' decline. Although illegal hunting remains a significant factor in some areas, particularly in Central Africa. ¹⁰
	<i>Rhinoplax vigil</i> CR, Appendix I Hunting pressure is expected to increase and spread across the species' range given the value that is placed on the species' 'ivory' casque in illegal trade. ¹¹
	<i>Eretmochelys imbricata</i> CR, Appendix I Major threat is the tortoiseshell trade. ¹²






⁹ IUCN SSC Antelope Specialist Group. 2017. *Hippotragus niger ssp. variari*. The IUCN Red List of Threatened Species 2017: e.T10169A50188611. [http://www.iucnredlist.org/details/10169/0\(2017/11/20\)](http://www.iucnredlist.org/details/10169/0(2017/11/20))

¹⁰ Blanc, J. 2008. *Loxodonta africana*. The IUCN Red List of Threatened Species 2008: <http://www.iucnredlist.org/details/12392/0> (2017/11/20)

¹¹ BirdLife International. 2016. *Rhinoplax vigil*. The IUCN Red List of Threatened Species 2016: e.T22682464A92947540. [http://www.iucnredlist.org/details/22682464/0\(2017/11/20\)](http://www.iucnredlist.org/details/22682464/0(2017/11/20))

¹² Mortimer, J.A & Donnelly, M. (IUCN SSC Marine Turtle Specialist Group). 2008. *Eretmochelys imbricata*. The IUCN Red List of Threatened Species 2008: e.T8005A12881238.

<http://www.iucnredlist.org/details/8005/0> (2017/11/20)




	<p>Emberiza aureola EN, Appendix I Since many populations on pristine breeding grounds have dropped rapidly, the decline is likely to be driven by excessive trapping at migration and, in particular, wintering sites.¹³</p>
	<p>Whale Shark EN, Appendix II Whale Sharks are subject to large- and small-scale bycatch in fisheries, with some national and international trade in products. They are also a focal species for marine tourism industries.</p>
	<p>Addax nasomaculatus CR, Appendix I Addax are subject to uncontrolled hunting for their meat, horns and hide; and levels of poaching have increased by both the armed forces and the local community.¹⁴</p>
	<p>Ursus thibetanus Vu, Appendix I Habitat loss due to logging, expansion of agriculture and plantations, roadway networks and dams, combined with hunting for skins, paws and especially gall bladders are the main threats to this species.¹⁵</p>
	<p>Cotinga maculata EN, Appendix I This species's prevalence in the illegal wild bird trade, together with the rarity of sightings in the wild, suggest a very rapid and continuing population decline.¹⁶</p>

¹³ BirdLife International. 2017. *Emberiza aureola*. (amended version published in 2016) The IUCN Red List of Threatened Species 2017: e.T22720966A110690385.
[http://www.iucnredlist.org/details/22720966/0\(2017/11/20\)](http://www.iucnredlist.org/details/22720966/0(2017/11/20))

¹⁴ IUCN SSC Antelope Specialist Group. 2016. *Addax nasomaculatus*. The IUCN Red List of Threatened Species 2016: e.T512A50180603.
[http://www.iucnredlist.org/details/512/0\(2017/11/20\)](http://www.iucnredlist.org/details/512/0(2017/11/20))

¹⁵ Garshelis, D. & Steinmetz, R. 2016. *Ursus thibetanus*. (errata version published in 2017) The IUCN Red List of Threatened Species 2016: e.T22824A114252336.
<http://www.iucnredlist.org/details/22824/0>

¹⁶ BirdLife International. 2017. *Cotinga maculata*. (amended version published in 2016) The IUCN Red List of Threatened Species 2017: e.T22700886A110781901. [http://www.iucnredlist.org/details/22700886/0\(2017/11/20\)](http://www.iucnredlist.org/details/22700886/0(2017/11/20))

	<p><i>Cacatua sulphurea</i> CR, Appendix I This cockatoo has suffered (and may continue to suffer) an extremely rapid population decline, owing to unsustainable trapping for the cagebird trade.¹⁷</p>
	<p><i>Pitta gurneyi</i> EN, Appendix I In Thailand at least, snare-line trapping for the cage-bird trade is also a serious threat.¹⁸</p>
	<p><i>Leucopsar rothschildi</i> CR, Appendix I Its decline to virtual extinction in the wild is primarily attributable to unsustainable, illegal trapping in response to worldwide demand for the cage-bird trade</p>

<Table3-2> Animal References

¹⁷ BirdLife International. 2016. *Cacatua sulphurea*. The IUCN Red List of Threatened Species 2016: e.T22684777A93045770
[http://www.iucnredlist.org/details/22684777/0\(2017/11/20\)](http://www.iucnredlist.org/details/22684777/0(2017/11/20))

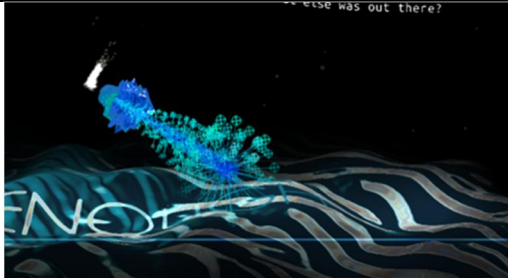

¹⁸ BirdLife International. 2016. *Hydrornis gurneyi*. The IUCN Red List of Threatened Species 2016: e.T22698628A93693307.
[http://www.iucnredlist.org/details/22698628/0\(2017/11/20\)](http://www.iucnredlist.org/details/22698628/0(2017/11/20))

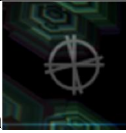
Chapter 4. Interactive Picturebook Case Study

In this Chapter, different types and forms of interactive picturebooks are studied and compared to get a better understanding of the interactive picturebooks and the existing advantages and disadvantages in those design cases.

4.1 Enough

Enough is a design case that concentrates on an artistic way to represent the story, the interaction process and the structure is simple, though the music and images are beautifully made. However, because it's abstract color and image style, it's hard to get involved in the story emotionally. The simple story structure and interaction process making the experience time respectively short.

Basic	Name	Enough
	Platform	Web based, WebGL picture book on PC
	Genre	Adventure
Tableaux	Visual	  <p>3D, Abstract Style, Dark color with luminous effect, Vibrant color, cold, abstract, high contrast – Mystery, unfamiliar, technology Observe, objective; Alienating;</p>

	Audio	Background Music
	Layout	Landscape tableaux, words animate with the movement of mouse
	Typeface	typewriter font;
Transition	Navigation	 Only one icon for page-turn
	Transition	Turn pages
Interaction	Level of Interactivity	Several interactive elements but not story related
	Interaction Type	Text animation, Mouse click on icon for page turn
Narrative	Narration	Indicate the location of the story, several interactive elements but not story related, low tempo story



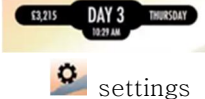

<Table 4-1> Case Study of Enough


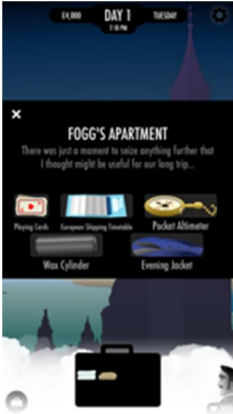
4.2 80 Days

Although 80 days is categorized as strategy games in App Store, it is actually an interactive book adapted from Jules Verne' s fiction Around the World in Eighty Days and transform the story into an interactive multi-branch story with selections and other interactive elements. The reading experience is beautifully designed, however as it is not a picturebook, the visual design seems not helping to enhance the experience to a higher level. Because the fiction is respectively long and the interaction makes the experience even longer than reading the actual fiction.

The disadvantage of this work is the selections are most-time based on words, so that makes the reading process a little bit complicated and harder than reading the original book.

Basic	Name	80 days
	Platform	App on smartphone and tablet PC
	Genre	Adventure, adapted from Jules Verne' s fiction Around the World in Eighty Days



Tableaux	Visual	 <p>Observe, objective; Appreciative; Minimal Generic, Simplified illustration muted color, warm, high contrast</p>  <p>Clean shapes and gradients are commonly used</p>
	Audio	Background Music
	Layout	Horizontal tableaux, fluid linear reading with long texts;
	Typeface	Serif
Transition	Navigation	 <p>settings</p>  <p>map like navigation for jumping from tableau to tableau, also showing the process of the story</p>

		 <p>pop-up style tableaux, pops up on the map which serves as content; close icon for going back to content</p>
	Transition	Animations that animates the process of travelling
Interaction	Level of Interactivity	High;
	Interaction Type	<p>Click to go into different story branches, drag items, selling items. Scroll to read.</p>  <p>game like features;</p>
Narrative	Narration	Role play as the main character Phileas Fogg's valet Passepartout; Travelling around world Help Phileas Fogg travel around the world

<Table 4-2> Case Study of 80 days

4.3 Jack and the Beanstalk by Nosy Crow



Basic	Name	Jack and the Beanstalk by Nosy Crow
	Platform	App
	Genre	Childbook, fairy tale

Tableaux	Visual	 <p>Observe, objective Empathy – personalized Generic, illustrative Vibrant, especially the characters’ color is the most vibrant part. Warm tone, high contrast.</p>
	Audio	Children voice narrator
	Layout	<p>Landscape illustration with words come up in dialogue bubbles</p> 
	Typeface	Sans–serif
Transition	Navigation	No navigation icons
	Transition	Rotate device and swipe on the screen. It’ s like an transformation book where everything looks on a same page
Interaction	Level of Interactivity	medium
	Interaction Type	Dialogue, explore, small games
Narrative	Narration	In this app book is made interactive by adding in mini–games as Jack explores the giant’ s house, but being careful to make the rewards more story – text and dialogue – putting the game–like elements to work on encouraging its young audience to read.

<Table 4–3> Case Study of Jack and the Beanstalk by Nosy Crow

4.4 Timeline WW1



Basic	Name	Timeline WW1 with Dan Snow
	Platform	App
	Genre	History, non–fiction

Tableaux	Visual	 <p>Observe, objective alienating Realize, illustrative Muted color, deep background, light color as foreground.</p>
	Audio	Background music
	Layout	 <p>Words and informations are in unit and spread as pop-up's with the texture and design motif like post it, photo, letters</p>
	Typeface	serif
Transition	Navigation	Metaphor for users to touch and zoom or swipe.
	Transition	Touch the information unit to get details, swipe to jump from tableau to tableau.
Interaction	Level of Interactivity	low
	Interaction Type	Reading, click to get details
Narrative	Narration	History facts told through the conflict's key moments with deep archives of images, video, audio and maps.

<Table 4-5> Timeline WW1 with Dan Snow

It is a successful example of chucking historical information into units and represent them in an organized, non–linear, and interactive way.

4.5 Her Story

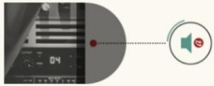
Basic	Name	Her Story
	Platform	PC game, app
	Genre	detective
Tableaux	Visual	 <p>Contact, subjective empathy Reality Vintage style of color, design motifs and video..Designed like a vintage computer Database</p>
	Audio	Background music, video narration
	Layout	<p>Vintage style</p> 
	Typeface	Pixel, old–system–like
Transition	Navigation	Information units are put together in an vintage look as a computer desktop, easy for user to use and also build a immersive tableau

	Transition	Open video file, back to desktop.
Interaction	Level of Interactivity	high
	Interaction Type	Watch videos, solve cases, small games
Narrative	Narration	Players search and sort through a database of video clips from fictional police interviews, and use the clips to solve the case of a missing man.

<Table 4–5> Her Story

It' s an interactive movie, which also included in the concept interactive picturebook in this thesis. The best part of this case is that it uses the subjective viewpoint and real human acting videos to make a very authentic personalized emotionally engaging experience, the user participates directly in this narration to discover the story and viewpoint of different characters.

4.6 Device 6

Basic	Name	Device6
	Platform	App on mobile phone
	Genre	Detective
Tableaux	Visual	<p>perhaps there would be a real priest there to give her some answers. But inst</p> <p><i>K, now. What happened? How the hell did I get here from the garden?</i></p> <p><i>A safe ... in the gazebo. I opened it, didn't I? is a ... a tulip inside of it. wonderful ... then ... gas?</i></p> <p><i>They drugged me! those bastards drugged me!</i></p> <p>There was no congregation, just the gramophone priest and his prerecorded message. Anna gave him a closer look and couldn't help but feel a little bit embarrassed as she peeked inside his robe. In place of a body was a rack of audio equipment. <i>Pheew!</i></p>  <p>Anna decid</p> <p>Anna made her way to the exit and tried the h</p> <p>Text as the main elements for Tableaux. Black and white photo, geographic shapes with high construct color. Observe, inferred subjective Appreciative but immersed Minimalistic, also some realistic images Black and weight with small bit of pure color (High saturation). Clean but mysterious.</p>

	Audio	Both diegetic and non-diegetic. Require reading with sound turned on
	Layout	<p>Words with different direction, indicating the flow of the story. Scenes constructed by pure text. Clues hidden in the scene and the user need to get the clues from the scene to solve the problems.</p>
	Typeface	Sans-serif
Transition	Navigation	Rotate device
	Transition	Rotate device and swipe on the screen. It's like an transformation book where everything looks on a same page
Interaction	Level of Interactivity	Highly
	Interaction Type	<p>Slide and turn the device to follow the reading.</p> <p>Solve puzzles to get into the next stage of the story.</p> <p>Get the passcode form the passages and solve puzzles to push the story go forward</p>
Narrative	Narration	Device 6 begins when a woman named Anna finds herself in a strange castle, with no recollection of how or why she might be there. The game is filled with bizarre contraptions, cryptic clues, audio recordings, and locked doors. It's divided into six chapters with puzzles that readers need to solve to get to next stage.

<Table 4–6>Device 6

The most interesting part of this design is that it took the features and interactions from transformation books, by lead users to view the words from different directions to realize a sort of “unfolded” experience. The reading experience in Device 6 is very stylishly made, and the story is successfully told without pictures but the whole design on the screen as an image.

4.6 Summary

Tableaux	Visual	Illustration is always the most important role of print–based picturebooks. However, in digital picturebooks, the image could be film, illustration, photos. Many Illustration don’ t have to be detailed, but more abstract, generic and geographic.
	Audio	Sound is not as important as it is in film, they could be muted in many occasions, as people tend to use smart phone and tablet PC in public without headphone. However, if the sound matters, the developer may ask the user to prepare headphone.
	Layout	The Information is placed in a non–linear fashion. Text could be read as dialogue, attached descriptions, or in a fluid linear way in case of long passages.
	Typeface	1) Easy to read; 2) Fits the story.
Transition	Navigation	Not many UI elements. The navigation tend to be rely on the metaphor or the signs / icons designed as part of the tableaux to guide the User.
	Transition	Page turn is most common. Some of them takes the features from film and game for the transition between tableau and tableau.
Interaction	Interaction Type	The common type is puzzle solving, however the rules may differs because of the story
Narrative	Narration	The Story is pre–determined, although it could have different branches. It seems hard at this stage to develop storytelling generated from users’ action and behavior during their reading.

<Table 4–7>Summary

Usually, in a picturebook, the function of pictures, or iconic signs is to describe or represent. The function of the words, conventional signs is primarily to narrate. The conventional signs are often linear, while iconic signs are non-linear and do not give us direct instruction about how to read them.

Nikolajeva & Scott (Nikolajeva & Scott, 2013) discussed in their work about 5 ways text and images relate in picturebooks:

- 1) Symmetry, equivalence of words and pictures;
- 2) Complementarity, words and pictures work independently;
- 3) Enhancement, words and pictures extend each other's meaning;
- 4) Counterpoint, words and pictures tell different stories and are an ironic relationship;
- 5) Absolute, contradiction of words and pictures.

The existing interactive picturebooks could be summarized into following categories:

- a) Pictures with voice dialogue and moving images such as films with usually script or sound as the main storyteller, words only help readers to get the scripts exactly, such as *Her Story* and Jack and *the Beanstalk by Nosy Crow*.
- b) Pictures serve as the background and interactive contents. Users interact with the tableaux constructed by pictures while reading the story in texts, such as *Enough*, *Device6*, *80 days*.
- c) Pictures and texts are separated into different information units and are ranged together in a visual element based contents, such as *Timeline WW1 with Dan Snow*.

Chapter 5. Design

5.1 Narration Developing



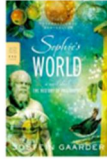

5.1.1 Users Study

To understand the users' experiences with illegal wildlife trades and their regional culture, individual interviews were conducted with three interviewees from different regions of China. Considering the users from the targeted age group may not have introspections on their experience, the interviewees involved in this research are all adults with relevant experience in their middle childhood.

The interviews imply that the consumer behavior of Chinese people is strongly affected by the culture, especially in places like rural areas and Guangdong, Hong Kong. This culture motivates people to become the consumers in the illegal wildlife trade process with the understanding of the fact that the animals were endangered, and this culture and customs are often accepted from the behaviors of parents. This reveals the needs of the animal protection education about the motivation and consequences of consumers and criminals participating in illegal life trade.

A Persona is built based on the analysis of the interviewees' experiences and the observation of the reading hobbies of 9 to 12 years old Chinese users.

From this personal, we summarized three problems of the targeted users. The design proposal is an interactive fairy tale story with three different topics about illegal wildlife trade. The users can role play and engage in the story through the interactive features.

Region	Gender	Experience	Regional Culture
Zhejiang	Female	Ate pangolin ¹⁹ with parents at young age	Officials and rich people are eating endangered animals at banquet, parents often take children to banquets that serve endangered animals
Guangdong	Male	Ate different bushmeat at young age because of the regional food culture	Believes that many endangered animals have strong medical effects, have the culture of consuming animal products as jewelry
Jiangxi	Female	Relatives have hobbies of eating bush meat which have the possibility of being endangered animals.	People in rural areas have the custom of hunting wild animals as bushmeat.
Persona: Tian Xiaomeng			
<div>  <p>Tian Xiaomeng 11 years old, Middle School 1st Grade, Guangzhou</p> <p>Favorite Subject: Science, Literature, English Hobbies: Comic books, Reading, Mobile games Favorite Places: Pizza hut, Natural History Museum Recently Read and Watched :</p> <div>    </div> <p>9 -12 years old Chinese children (Pre-Teenage)</p> </div> <div> <p>Problem</p> <p>My relatives and my parents loves wild animals, they even tried to make me eat some dishes made by snake, peacock and pangolin.</p> <p>They always think that it's ok because they won't actually participate in the killing process.</p> <p>But is that really ok? I really want to figure it out by myself.</p> <p>Btw, I would like to know some information about endangered animals.</p> </div>			

<Table 5-1> User Study and Persona

5.1.2 Story Theme

The Design is made to be used on the smartphone devices as smartphones are the most common smart devices and users are now using smartphones every day. The goal of this chapter is to develop a story that is easy to read when using a smartphone.

In Chapter 3 we talked about the different starting points of caring about animals could be sorting to 4 stages of human needs. Among those needs, the highest needs for individuals is to have the sense of self-fulfillment, which means the needs to have introspection of themselves and other people.

¹⁹ Chinese Pangolin, Critical Endangered, Appendix I

The story of this design is constructed based on this starting point. the main idea of this design work is to talk about the problem of illegal wildlife trade and aiming at reducing the consumers demand on animal products.

The picturebooks textual contents contains two parts:

- 1) A story about two human characters and other animals.
- 2) Animal information of animal threaten by illegal wildlife trade.

Not like many of the animal protection advertising campaign that emphasizing the facts that animals are being treated cruelly, the main idea of this design is to discuss the relations between human, human society, and animals.

Rather than the criminals of poaching, hunting, and illegal traders, the human here in the story alludes to consumers of the illegal wildlife trade and focus on the social factors that influence on the behavior of consuming wildlife and wildlife products as decoration, jewelry, bushmeat, pet, and trophy.

Act Title	Content	Animals
Act1 "Hope and Bless" Bring the death	Animals traded as jewelry and craft artwork because of motivation formed by cultural, social factors	Giant sable antelope, hawksbill sea turtle, Tigers, African Elephants, Helmeted hornbill, Paradise Parrot
Act2 "Curiosity" Turns into Killing	Animals traded as food and bushmeat, because of cultural and inner factors (hunger of novelty)	Chinese Pangolin, Asiatic Black Bear, Whale Shark, Addax, Hump head Wrasse, Yellow-breasted bunting
Act3 "Love" for a price	Animals traded as pets, because of social(status) and inner factors (hunger of being unique)	Cacadu sulphurea, Spinus cucullatus, Pitta gurneyi, Bali Myna, Xanthopsar flavus, Fregata andrewsi, Cotinga maculata

<Figure 5-1> Theme of design work

The story's goal is to discuss some of the inner facts that trigger the consuming and criminal behaviors in simple language. It is aimed at a user group with the age of 9-12 when people are starting to participate in open discussion and need space for

thinking about the heated issues like social and environmental problems.

In a fable story, characters of animals, legendary creatures, plants, inanimate objects, or forces of nature are often employed to illustrate or leads to a particular moral lesson (a "moral"), to talk about the idea of virtue, right and wrong. A parable story differs from fable story, it is short story tale features human characters. The parable is often about people who are facing the moral dilemma or makes a bad decision. Usually, the meaning of a parable is not stated obviously, but the meaning is straightforward and the reader could easily tell the meaning from the story.

The narration of the design work is a parable story that features two main characters, The Visitor and The Man (shortened as V and M in the following chapters), who come from different worlds and meet at The Man's world.

The title of the storying is called *Awakening*, which stands for the awakening seeds of evil inside The Visitor and The Man.

5.1.3 Characters

The story is written in the second-person view. Users are able to read through the dialogues and understand the demands of two characters, and having interaction with the visual scenes. The visual scenes are the world, items the characters see and interact, which will be introduced detaildly in the following chapter.

The Visitor represents the consumers in the illegal wildlife trade, The Man represent the traders, poachers live in the place with rich animal resources.

The reason for designing the consumer character into The Visitor is to emphasize certain characteristics of illegal wildlife

trade consumers. Consumers are mostly from a highly developed society, as research of news and data suggests that many consumers are from rich and developed areas like Guangdong Province, Hong Kong, Japan, European countries. These consumers have an over-average economic capability, as the price illegal animal parts, especially the endangered animals are considerably high. Many of the consumers have high social-status, as most of the traded products like ivory, helmeted hornbill' s beak, bear' s paw, endangered birds are in some of the culture the symbol of richness and social status.

The other reason to design this character as with The Visitor feature is to remove of some of the human features in the process of consuming animals and animal parts, as in the story The Visitor takes animal parts to fix and polish her appearance, and taking energy from endangered animals for energy.

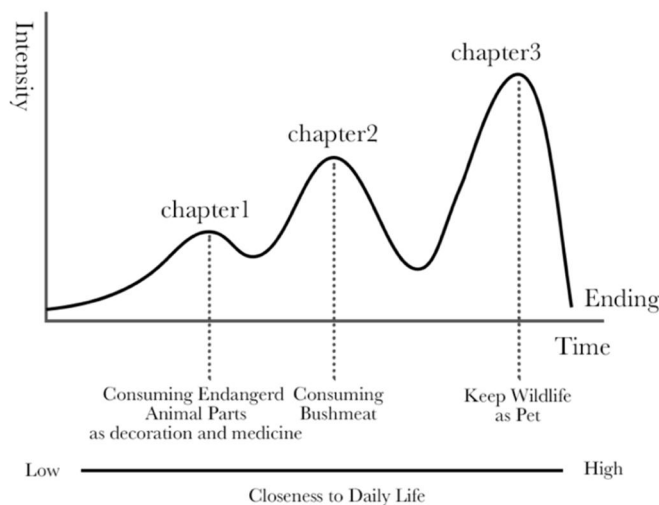
The Visitor character is superficial, insincere and cunning. The Visitor is acting politely, and often uses the words like love, beautiful, special, precious to describe the animal friends. However, the way The Visitor projects her lovingness is to take possession of the animal' s dead body, eat, kill and keep them in captivity. All she wants is to have those animals to hunting novelty and flaunting her uniqueness, wealth and social status.

The Man character is firstly kind hearted. He did not realize how treasurable her friends are until she got inexhaustible jewelry from The Visitor. Because of The Visitor' s demand and money, the man became cold-blooded and greedy. He sold his animal friends to The Visitor for gold and diamond. In the end, all the animal friends were killed as his business became bigger. The Visitor became his new target, as another rich party paid him to hunt The Visitor and purchase The Visitor just as how she purchases the endangered animals.

In the visual design, two characters don't have visual appearances. They only appear in dialogues. The users are in the role of the visitor while reading the textual contents and voice narrations, and are in the role of the Man while reading the multimodal contents and interacting with the multimodal contents. This realizes the distancing effects which let the users not fully emotionally involved in the story and keep thinking and criticizing calmly and rationally (Brecht, 2014). Also, the story happens in a fictional world, which also enhance the distancing effects in the storytelling. In the narration, animals are introduced into the story as animal friends. The animal characters have anthropopathic features as they are "friends" who teach the Man how to make tools, work to produce energy and live in cities, and also remains in the visual appearance of the real animals.

The lines of the Man are marked with the contrary color of the main color in each chapter. The lines of the Man are all quoted with quotation marks. This is also designed intentionally to bring more distance between the Man character and the users.

5.1.4 Plot



<Figure 5-2> Plot of The Story

The intro part serves as an overview of the story and also the tutorial of this application. This part is story told from the animals' perspective.



<Figure 5-3> Intro

The story begins when Man was walking through a place like a desert. He found a broken The Visitor in the desert. The first four scenes are animations controlled by single taps and serve as warming up stage.

The Visitor was trapped in The Man' s world for a long time. He wanted to shake hands with the Man to show appreciation, but it was too broken to move. The Man offered help and took to the friends who used to help the people from The Man' s world to

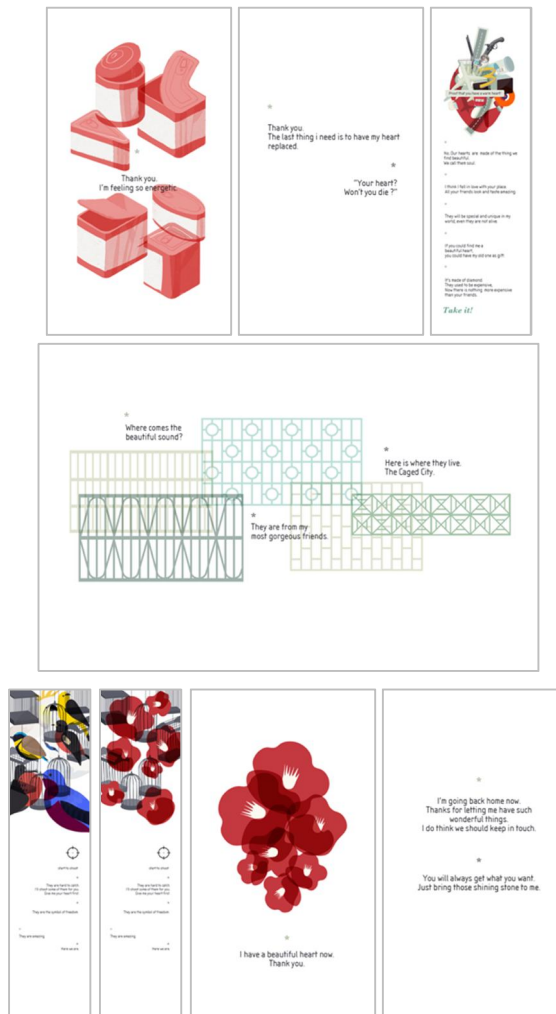


Figure 5-47 Act 1



The Visitor then asked the Man to find him a beautiful heart. He said her heart was her soul which is made of things she loved, she wanted to find a new one as she fell in love with the amazing animals. The Man noticed that there was an airplane shape on The Visitor' s heart so she took The Visitor to the caged city.

In the caged city live the friends who are the freest and most beautiful friends of the Man, however, they are not easy to capture. The Man used a gun to shoot them down and The Visitor kept them as her soul.



<Figure 5-6> Act 3

In the end, The Visitor decided to continue the trade between them. But when all the precious animal friends are gone, the gun of the Man turned to her new friend, The Visitor.



<Figure 5-7> Outro

5.2 Tableaux Design

5.2.1 Colors

The visual design of this work also follows the plot curve of the main story. In the first and last part of the story, where story is less in intensity, the colors are also simple, in the climax of the story (Act 2 ending and Act 3), the color use is more colorful and high contrast.



Chapter 1

Keywords : Low conflict, Irony, Superficial, Starting stage of evilness

<Figure 5–8> Act 1 Color

Irony is the main idea of Act 1' s color choice. The idea of this chapter is use abstract color choice and simple patterns to construct the tableaux to reach an alienating effect to lead users to keep a rational distance with the problems of the story.

As the color orange in color psychology have both positive meaning like optimistic, joyful and negative meaning like superficial and insincere, it becomes the main color of this Act.

The other important keywords of this chapter are the starting stage of evilness low conflict. With these keywords, the color red, which is seldom used in this chapter.

However, trading illegal animal parts and killing endangered animals for craft are considered as severe crime. The reason to put it in to a low–conflict chapter is that most of the people are aware of effect of killing elephants, rhinos for ornaments and jewelry, which also means that is less close to people' s daily life.

As for the dialogues in this chapters, two colors are used as hint for different characters. The Visitor Character is always using the main color of the chapter, the man is always use the cold tone and contrary color.



Chapter 2

Keywords : Lust for novelty and amusement, vibrant

<Figure 5–9> Act 2 Color

The second chapter is about the consuming of animal bushmeat. Red is the main color of this chapter and the next chapter, as the symbol of life and death. As this chapter talks about how the chase of novelty and specialness feeling led The Visitor to purchase precious food, on the contrary of the cruel fact after this pursuit of happiness, vibrant colors are used to create the alienating effect.



Chapter 3

Keywords : Contrary, Conflict, Love and Death

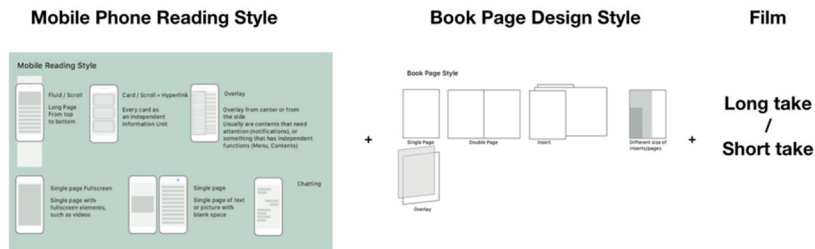
<Figure 5–10> Act 3 Color

The third chapter is about keeping wild animals as pets. The intention of this color choice is to express the contrary between “love” and the cruelty behind it.

5.2.2 Layout

The intention of this design is to use scripts and dialogue as the main body of the story, the images and interaction elements as the tableaux of what the character see and touch. Sound are used to help constructing the tableaux. The Layout is referred to the rule of responsive mobile website design and chatting interface. Another

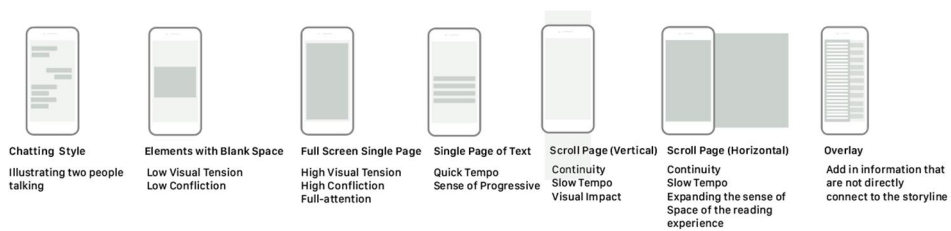
Inspiration of the layout is the silence film, in which scripts serves not only as scripts but also as break down for different visual scene.



<Figure 5-11> Different design features

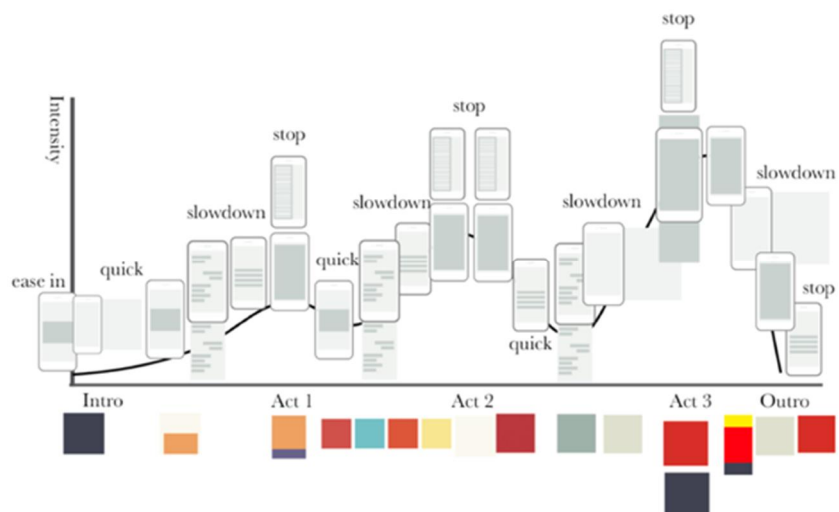
The main intention of the design's page-separation is based on the study of the book page features and mobile reading style. Most of the mobile reading app will have either scroll, which will show the whole of the reading contents without switching pages, or single screen with or without realistic book page turning features.

The page-separation in this design is to use both scroll, single page and overlay to create a similar experience of single page, double page, insert, and overlay.



<Figure 5-12> Pages Style Used in Design

The page style used in this design are designed intentionally to serve the plot.



<Figure 5-13> Page Segmentation in the Design

5.3 Design Details



<Figure 5-14> Intro Scene 1, Scene2, Scene3

Elements	Description
Narration	Report about missing animals
Visual	Newspaper style
Interaction	Tutorial
Transition	Touch the picture

Elements	Description
Narration	Report about missing animals
Visual	Newspaper style
Interaction	Tutorial
Transition	Swipe > Left to right

Elements	Description
Narration	Report about missing animals
Visual	Newspaper style
Interaction	Tutorial, Swipe > Up to Down
Transition	Swipe > Left to right

<Table 5-2> Design Details for Intro Scene 1, Scene2 Scene 3

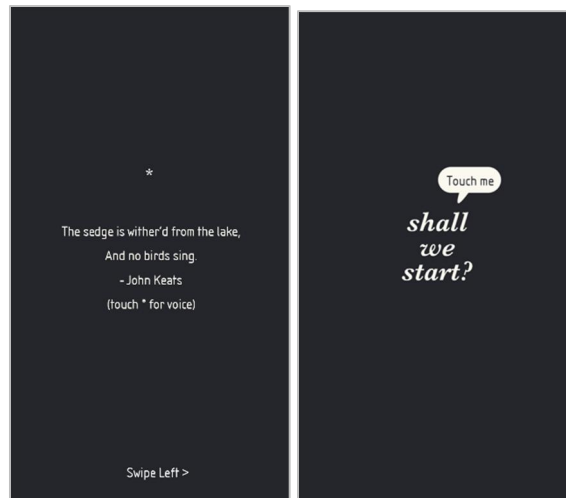


<Figure 5-15> Intro Scene 4, Scene5

Elements	Description
Narration	News about a man and mysterious visitor
Visual	Newspaper style
Interaction	Tutorial
Transition	Touch the picture

Elements	Description
Narration	Reports about mysterious visitor, reports about animal murdered
Visual	Newspaper style
Interaction	Tutorial, Swipe > Left to right
Transition	Swipe > Left to right

<Table 5-3>Design Details for Intro Scene 4, Scene5

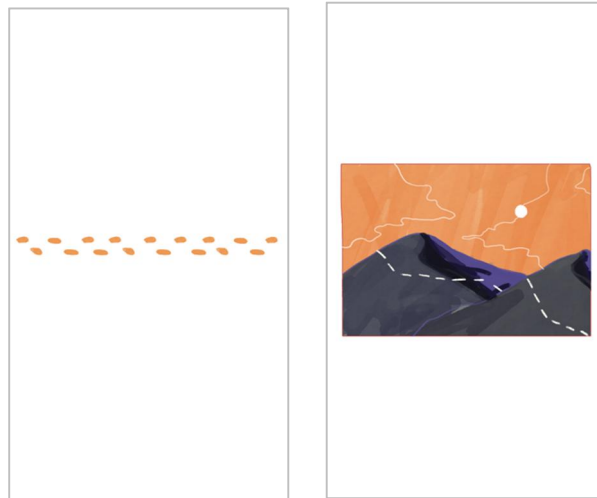


<Figure 5-16> Intro Scene 6, Scene7

Elements	Description
Narration	Quote from John Keats' poem
Script	The sedge is wither'd from the lake, and no birds sing.
Audio	Voice narration
Interaction	Touch the button to activate the voice narration.
Transition	Swipe > Left to right

Elements	Description
Narration	Start screen.
Script	Shall we start?
Audio	Tap sound.
Interaction	Touch the text to start.
Transition	Touch > Next scene

<Table 5-4> Intro Scene 6, Scene7



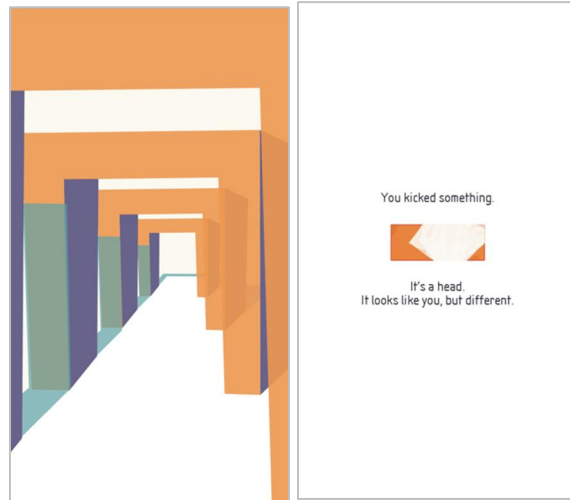
<Figure 5-17> Act 1 Scene 1, Scene2

Elements	Description
Narration	Main character is walking
Visual	Blank and animated footprints
Audio	Sound of walking in desert
Interaction	Touch > show footprints
Transition	Swipe > Left to right

Elements	Description
Narration	Main character is walking. Then kicked something.
Visual	Sand dune, character is walking. With a thread of footprints. Moving cloud.

Audio	Sound of walking in desert
Interaction	Touch > Control animation
Transition	Touch > Next scene

<Table 5-5>Design Details for Act 1 Scene 1, Scene2

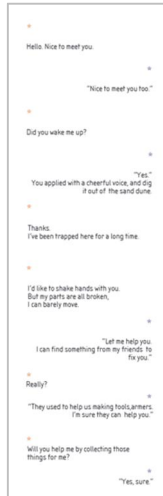


<Figure 5-18> Act 1 Scene 3, Scene4

Elements	Description
Narration	Main character is walking
Visual	Gates, moving from far > close
Audio	Sound of walking in desert
Interaction	Touch > show the closer gate
Transition	Touch > Next scene

Elements	Description
Narration	Main character kicked something. It woke up.
Script	You kicked something. It' s a head. It looks like you, but different.
Visual	Blank, with an animation looks like sound.
Audio	Hitting metal, computer sound, system starting.
Interaction	None
Transition	Automatically switch to next scene.

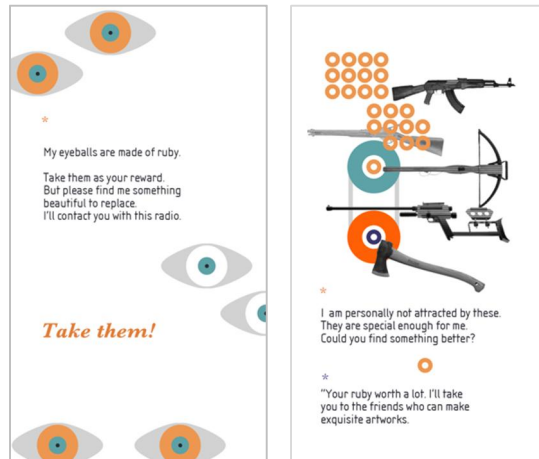
<Table5-6> Design Details for Prelude Scene 3, Scene4



<Figure 5–19> Act 1 Scene 5

Elements	Description
Narration	Talking. The Visitor(V)and Main Character(M) are talking to each other.
Script	<p>Hello. Nice to meet you. “Nice to meet you too.” Did you wake me up? “Yes.” You applied, with a cheerful voice, and dig it out of the sand dune. Thanks, I have been trapped here for a long time. I’ d like to shake hands with you. But my parts are all broken, I can barely move. “Let me help you. I can find something from my friends to fix you.” Really? “They used to help us making tools, armors. I’ m sure they could help you.” Are you willing to collect those things for me? “Yes, sure.”</p>
Visual	Blank, text
Audio	Voice Narration.
Interaction	Touch the button to activate the voice narration.
Transition	Swipe > Left to Right

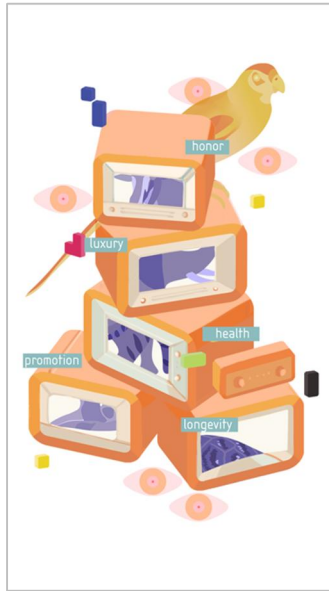
<Table5–7> Act 1 Scene 5



<Figure 5–20> Act 1 Scene 6, Scene 7

Elements	Description
Narration	V gives M her eyeballs as reward. M takes them.
Script:	My eyeballs are made of ruby. Take them as your reward. But please find me something beautiful to replace. I will contact you with this radio.
Visual	Text, “Take them!” , eyes
Audio	Voice Narration.
Interaction	Touch the button to activate the voice narration.
Transition	Click Take them.
Elements	Description
Narration	Walking through a place with man-made tools. V dislikes them.
Script:	I don’ t want to have these... They are not special enough for me. Could you find something better? “Your ruby worth a lot. I will find something better for you.”
Visual	Graphic shapes: weapons that are used for hunting
Audio	Voice Narration.
Interaction	Touch the button to activate the voice narration, parallax scrolling controlled by device motion
Transition	Swipe > Left to Right

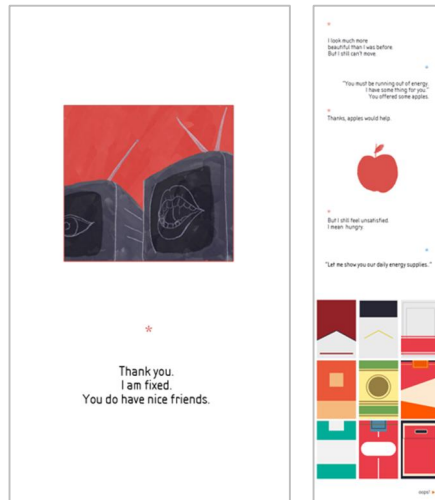
<Table5–8> Design Details for Act 1 Scene 6, Scene 7



<Figure 5–21> Act 1 Scene 8

Elements	Description
Narration	M is picking protected animal parts for V. Because they are special and precious, V likes them a lot. V thinks using those parts makes herself also different.
Script	<p>“I like their horns. make them my head piece.”</p> <p>“Ivory. I love them. The looks like my skin.”</p> <p>“Their bones could fix my body’ s wound.”</p> <p>“Their shell must be great on my body.”</p> <p>“Their mouth is gorgeous, they are way better than those ruby eyeballs.”</p> <p>Ok, buy, get, take, own.</p>
Visual	Televisions, Animals on television. Buttons, radio, animal and eyes
Audio	Voice Narration, voice of animals
Interaction	Listen to what V wants from the radio, click buttons to change the image on the TV to fit V’ s descriptions.
Transition	After all match up, automatically switch to the next scene

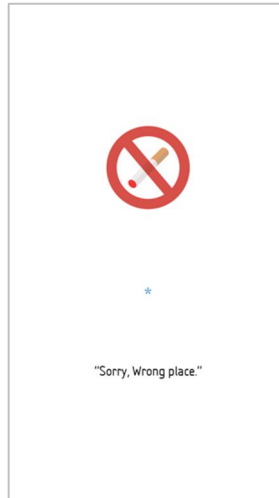
<Table5–9> Design Details for Act 1 Scene 8



<Figure 5-22> Act2 Scene 1, 2

Elements	Description
Narration	V is fixed.
Script	Thank you. I am fixed. You do have nice friends.
Visual	Televisions, mouth, eye
Audio	System restarting. Steam. Voice Narration.
Interaction	Touch the button to activate the voice narration, Touch to control animation.
Transition	Swipe > Left to Right
Elements	Description
Narration	V and M are talking. V is running out of energy. M offers V apples. V eat apples, but still feels unsatisfied with apples.
Script	I look much more beautiful than I was before. But I still can't move. “You must be running out of energy. I have something for you.” You offered some apples. Thanks, apples would help. But I still feel unsatisfied. I mean hungry. “Let me show you our daily energy supplies..”
Visual	Text, an animated apple
Audio	Voice narration, eating apple sound.
Interaction	Touch to control animation.
Transition	Swipe > Left to Right

<Table5-10> Act2 Scene 1, 2



<Figure 5–23> Act 2 Scene 3

Elements	Description
Narration	M takes V to place with what they usually eat. Interruption! They go to the wrong place.
Script	“Sorry! Wrong place.”
Visual	No smoking
Audio	Voice narration.
Interaction	Touch the button to activate the voice narration.
Transition	Swipe > Left to Right

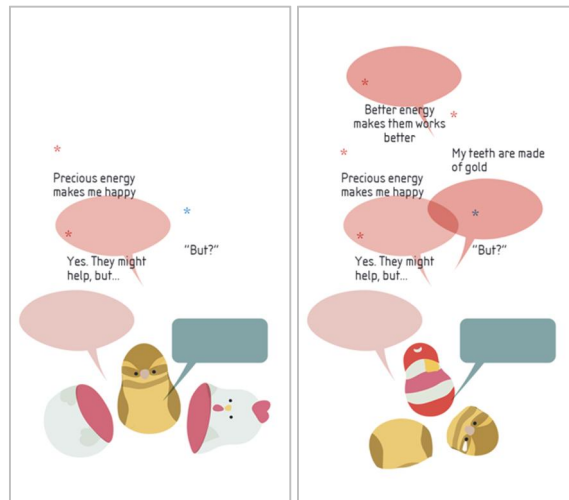
<Table5–11> Design Details for Act 2, Scene 3



<Figure 5–24> Act 2 Scene 4,5

Elements	Description
Narration	M shows V the friends who are making energy for them and asks if V wants to have some.
Script	“These friends work hard to provide the energy we need. Do you want to take some from them?”
Visual	Images of beef cattle, sheep, chicken, fish, duck, egg and the images are composited in the shape of a human face.
Audio	Voice narration. Animal sound.
Interaction	Touch the button to activate the voice narration. Touch each animal for further information.
Transition	Swipe > up/down.
Elements	Description
Narration	V is not satisfied with the “normal” friends.
Script	Yes. They might help, but... “But?”
Visual	A chicken shape matryoshka doll.
Audio	Voice narration. Sound effect of opening matryoshka.
Interaction	Touch the button to activate the voice narration, touch to control animation
Transition	Touch screen.

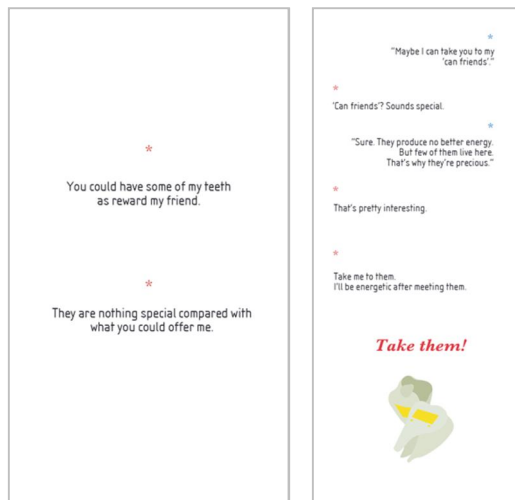
<Table5–12> Design Details for Act 2, Scene 4,5



<Figure 5–25> Act 2 Scene 6,7

Elements	Description
Narration	V is not satisfied with the “normal” friends.
Script	Yes. They might help, but… “But?” Precious energy makes me happy.
Visual	The chicken shape matryoshka doll opens, a yellow–breasted bunting matryoshka shows up.
Audio	Voice narration. Sound effect of opening matryoshka.
Interaction	Touch the button to activate the voice narration.
Transition	Touch screen.
Elements	Description
Narration	V is not satisfied with the “normal” friends.
Script	Yes. They might help, but… “But?” Precious energy makes me happy. My teeth are made of gold. Better energy makes them works better.
Visual	The yellow–breasted bunting shape matryoshka doll opens, a matryoshka looks like a mouth with a golden tooth shows up.
Audio	Voice narration. Sound effect of opening matryoshka. Weird laugh.
Interaction	Touch the button to activate the voice narration.
Transition	Touch screen.

<Table 5–13> Act 2 Scene 6,7

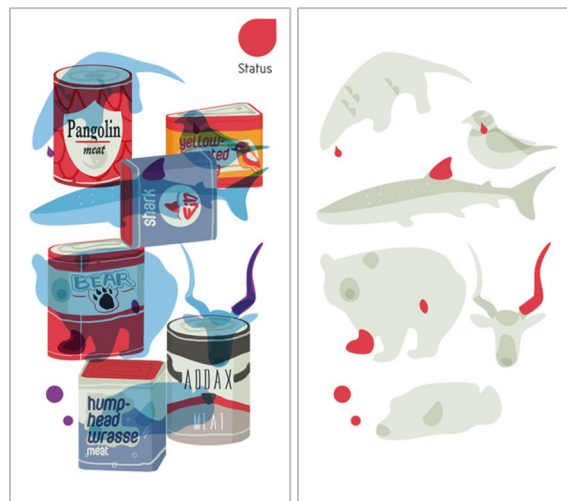


<Figure 5–26> Act 2 Scene 8,9

Elements	Description
Narration	V says M could have some golden teeth as reward.
Script	You could have some of my teeth as reward my friend. They are nothing special compared with what you could offer me.
Visual	Blank, text.
Audio	Voice narration.
Interaction	Touch the button to activate the voice narration.
Transition	Touch screen.

Elements	Description
Narration	M says she could take V to friends called 'can friends' , who produces similar energy but their energy is regarded as more precious as only a few can friends live there.
Script	"Maybe I can take you to my 'can friends' ." 'Can friends' ? Sounds special. "Sure. They produce no better energy. But few of them live here. That is why they' re precious." That is pretty interesting. Take me to them. I will be energetic after meeting them.
Visual	Blank, text.
Audio	Voice narration.
Interaction	Touch the button to activate the voice narration.
Transition	Swipe/ up > down

<Table 5–14> Act 2 Scene 8,9

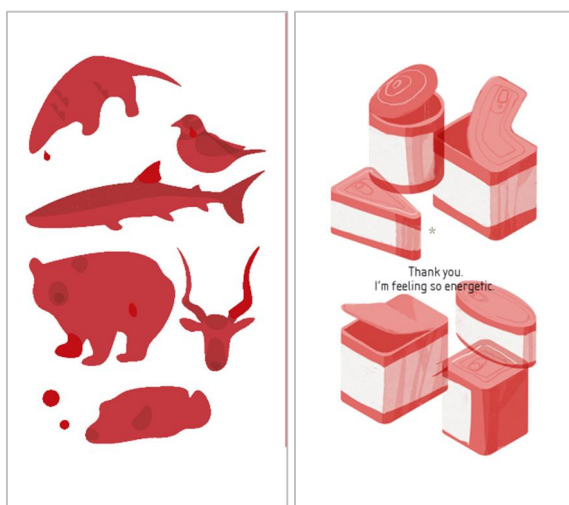


<Figure 5–27> Act 2 Scene 10, 11

Elements	Description
Narration	M says she could take V to friends called 'can friends', who produces similar energy but their energy is regarded as more precious as only a few can friends live there.
Script	Take them!
Visual	Golden teeth.
Audio	Voice narration.
Interaction	Touch to take the golden teeth.
Transition	Slide > Left to Right

Elements	Description
Narration	Precious energy.
Visual	Image of cans indicating the animals' name and the part they were consumed by people. Animal images.
Audio	Can shaking.
Interaction	Touch Status to present their Relist status. Touch cans to open a pop up for animal information. Touch the status icon to dismiss the open up. Drag the cans to take them away. When the can is taken, the light blue animal turns to light grey.
Transition	Swipe.

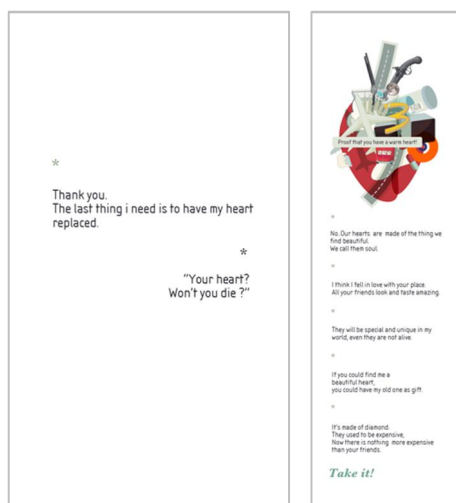
<Table 5-15>Design Details for Act 2 Scene 10,11



<Figure 5-28> Act 2 Scene 12, Act 3 Scene 1

Elements	Description
Narration	Precious energy.
Script	
Visual	Animal images.
Audio	Water
Interaction	Grey animal illustration is filled with red color. Act 2 ends.
Elements	Description
Narration	V says she is energetic.
Script	Thank you. I' m feeling so energetic.
Visual	Empty cans.
Audio	Empty can sound.
Interaction	If the can is touched the can sound will be played.
Transition	Slide up/down.

<Table 5–16> Design Details for Act 2 Scene 12, Act 3 Scene 1

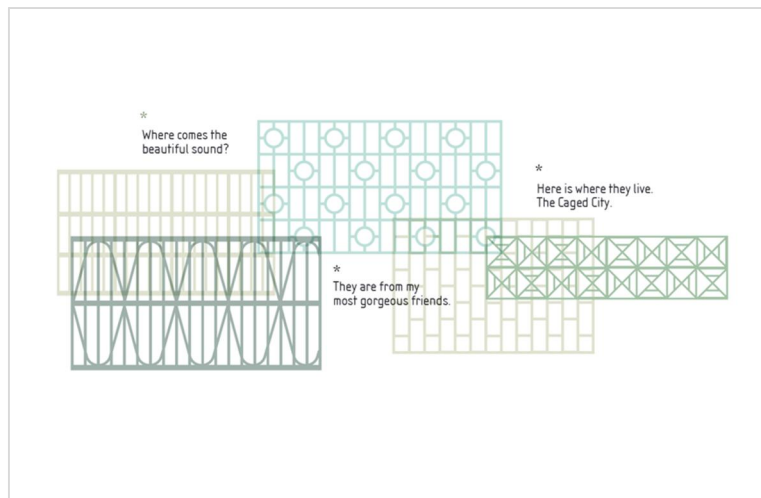


<Figure 5–29> Act 3 Scene 2, 3

Elements	Description
Narration	V thanks M. The last thing she needs is to have her heart replaced.
Script	Thank you. The last thing I need is to have my heart replaced. “Your heart?” “Won’ t you die?”
Visual	Text
Audio	Voice narration.

Interaction	Touch the button to activate the voice narration.
Transition	Slide up/down.
Elements	Description
Narration	R' s heart.
Script	<p>No... Our hearts are made of the thing we find beautiful. We call them soul. I think I fell in love with your place. All your friends look and taste amazing. They will be special and unique in my world, even they are not alive. If you could find me a beautiful heart, you could have my old one as gift. It's made of diamond. They used to be expensive. Now there is nothing more expensive than your friends now. Take it.</p>
Visual	R' s heart. Guns, bullets (war, hunting) trunk, road (stands for the transportation process in the smuggling process) Red sea, polar bear (pollution, global warming) placebo, pills
Audio	Car sound, plane sound, news, etc.
Interaction	Click each icon there will be animation or sound.
Transition	Slide up/down.

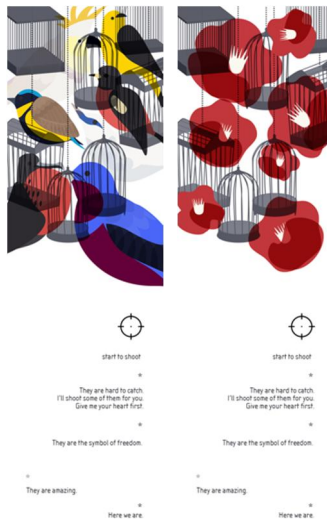
<Table 5–17> Design Details for Act 3 Scene 2, 3



<Figure 5–30> Act 3 Scene 4

Elements	Description
Narration	V and M are walking to the caged city.
Script	Where comes the beautiful sound? They are from my most gorgeous friends. Here is where they live. The Caged City.
Visual	Text, Window patterns that looks like cages.
Audio	Voice Narration.
Interaction	Touch the button to activate the voice narration.
Transition	Swipe> Left to Right

<Table 5–18> Design Details for Act 3 Scene 4

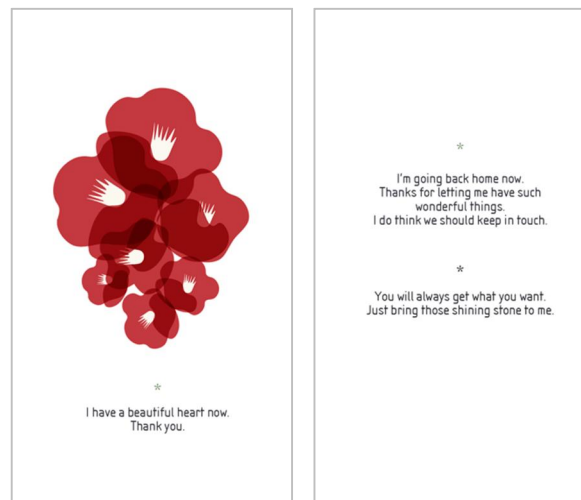


<Figure 5–31> Act 3 Scene 5

Elements	Description
Narration	The caged city, with birds.
Script	Here we are. They are amazing. They are the symbol of freedom. They are hard to catch. I will shoot some of them for you. Give me your heart first.
Visual	Cages, and birds, Text, Red flowers.

Audio	Voice Narration. Gun
Interaction	Swipe > down t to top. Touch the button to activate the voice narration. Drag the aim to the birds. Touch and shoot. The bird becomes flower after being shot.
Transition	Swipe> Left to right

<Table 5–19> Design Details for Act 3 Scene 5



<Figure 5–32> Act 3 Scene 6,7

Elements	Description
Narration	New heart.
Script	I have a beautiful heart now. Thank you.
Visual	Flowers in a heart shape.
Audio	Voice Narration.
Interaction	Touch the button to activate the voice narration.
Transition	Swipe> Left to right
Elements	Description

Narration	In the end, The Visitor decided to continue the trade between him and the Man.
Script	I' m going back home now. Thanks for letting me have such wonderful things. I do think we should keep in touch. You will always get what you want. Just bring those shining stone to me.
Visual	Text
Audio	Voice Narration.
Interaction	Touch the button to activate the voice narration.
Transition	Swipe> Left to right

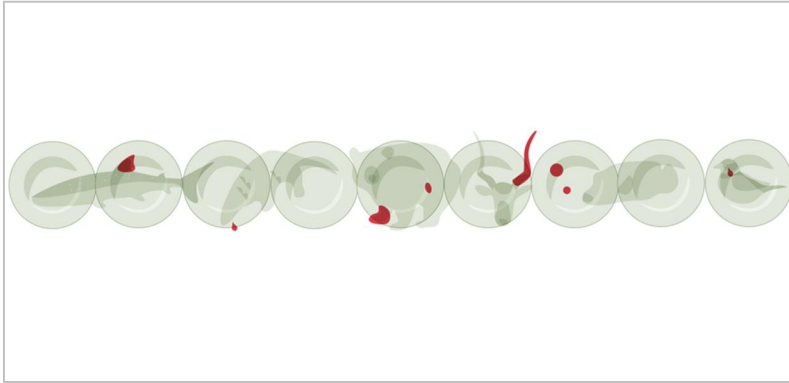
<Table 5–20> Design Details for Act 3 Scene 6,7



<Figure 5–33> Outro Scene 1

Elements	Description
Narration	Save! Sale! Free! Increasing market.
Visual	Price tags with words like save and free
Audio	Voice Narration.
Interaction	Parallax scroll controlled by device motion.
Transition	Swipe> Left to right

<Table 5–21> Design Details for Outro Scene 1



<Figure 5–33> Outro Scene 2

Elements	Description
Narration	Animals are eaten in restaurants.
Visual	Plates with animals
Audio	Voice Narration.
Interaction	Touch the button to activate the voice narration.
Transition	Swipe> Left to right

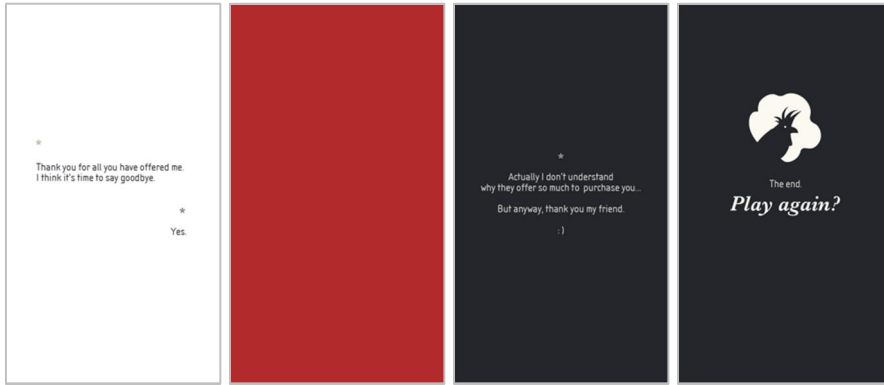
<Table 5–22> Design Details for Outro Scene 2



<Figure 5–34> Outro Scene 3,4

Elements	Description
Narration	Animals are all killed. V decided to end their business relation.
Script	My friend. Your place is worthless now.
Visual	Text
Audio	Voice Narration.
Interaction	Touch the button to activate the voice narration.
Transition	Swipe> Left to right

<Table 5–23> Design Details for Outro Scene 3,4



<Figure 5-35> Outro Scene 5,6,7,8

Elements	Description
Narration	V decided to end their business relation.
Script	Thank you for all you have offered me. I think it' s time to say good bye. Yes.
Visual	Text
Audio	Voice Narration. Gunfire.
Interaction	Touch the button to activate the voice narration. After a few seconds, the screen turns red with the sound of gunfire.
Transition	Automatically
Elements	Description
Narration	M killed V because someone else want to purchase V' s dead body.
Script	Actually, I don' t understand why they offer so much to purchase you... But anyway, thank you my friend. :)
Visual	Black
Audio	Voice narration.
Interaction	Touch the button to activate the voice narration.
Transition	Touch

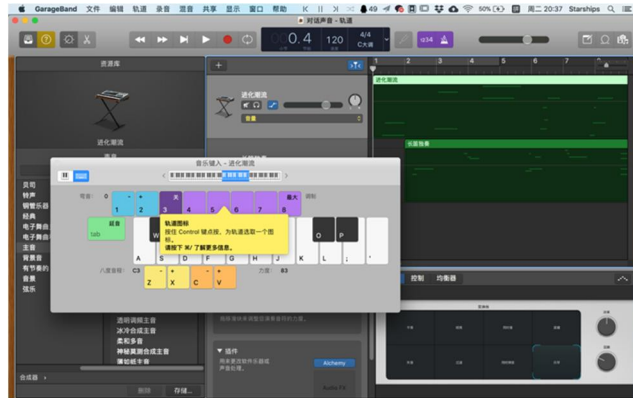
<Table 5-24> Outro Scene 5,6,7,8

5.4 Implementation

5.4.1. Sound

The sound of the design is inspired by Franz Schubert' s Erlkönig, which uses music and the different voice of the singer to

express the dialogue between father, son and the elf king. Another inspiration is the silence film which use different music segments to replace the voice line of the roles. The sounds of the Man character are made by GarageBand, by using two different instruments as the voice line of two characters. The sound of the Visitor character is human voice recorded from text-to-speech software.

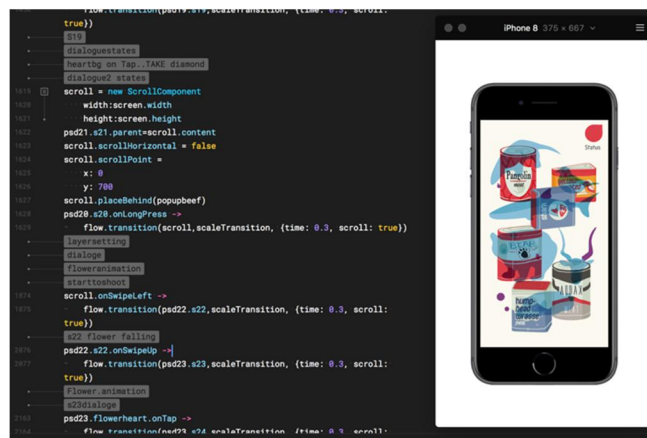


<Figure 5-36> Sound Making Process

5.4.2 Prototype

The interactive prototype is made by Framer with Coffee.js.

Link : <https://framer.cloud/jOYTV>



<Figure 5-37> Prototype Making Process

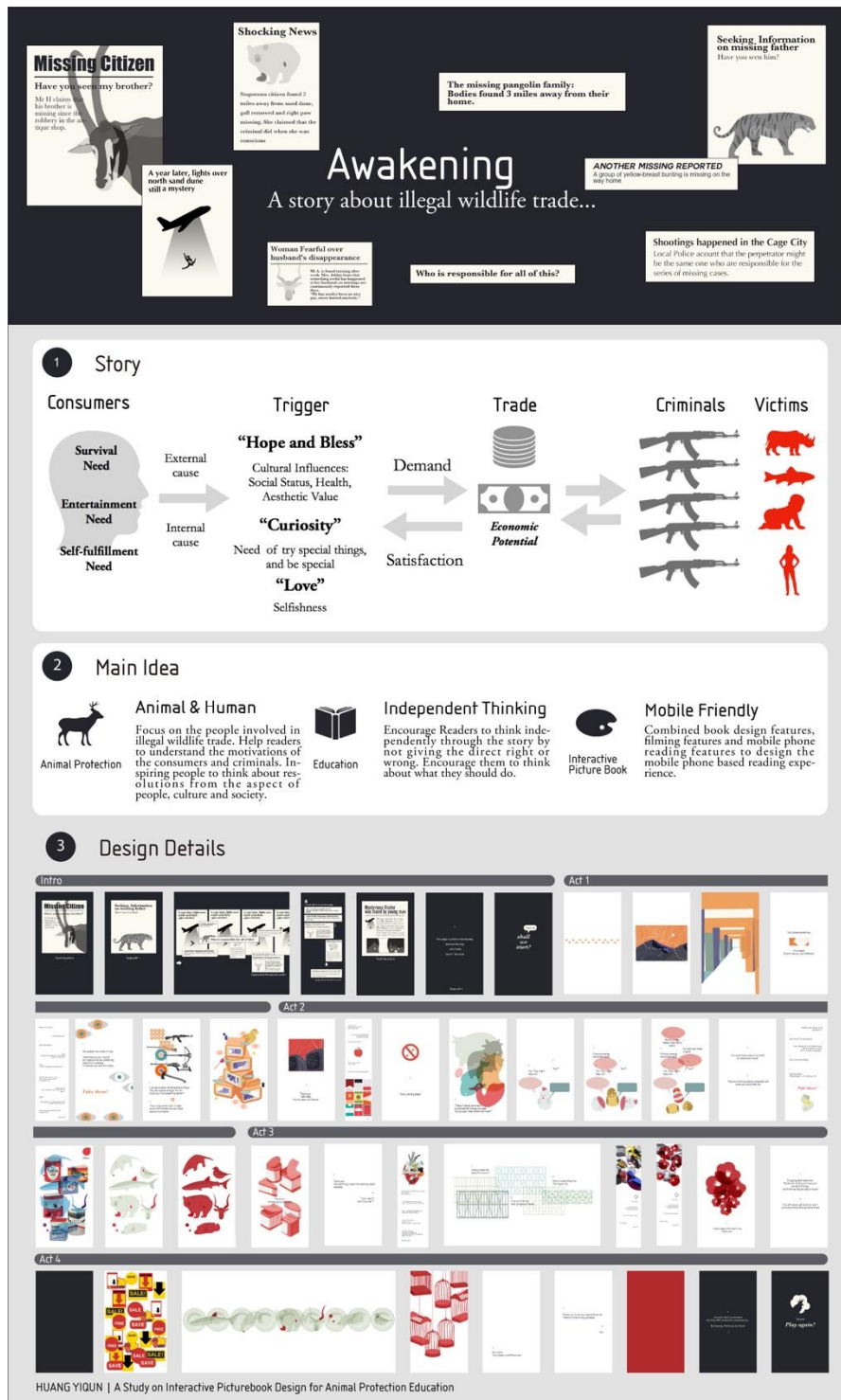
A video is made by After Effects to introduce the using process and the story.

Link: <https://vimeo.com/249623376> Password: awakening



<Figure 5-38> Video

5.5 Final Work



<Figure 5-39> Panel

Missing Citizen

Have you seen my brother?

Mr H claims that his brother is missing since the robbery in the antique shop.



Touch the picture



< Swipe right to view previous page

**The missing pangolin family:
Bodies found 3 miles away from their
home.**

ANOTHER MISSING REPORTED

A group of yellow-breast bunting is missing on the way home

Woman Fearful over husband's disappearance



Mr A. is found missing after work. Mrs. Addax fears that something awful has happened to her husband, as missings are continuously reported these days.
"He has awalys been an nice guy, never hurted anybody."

scroll

Shocking News



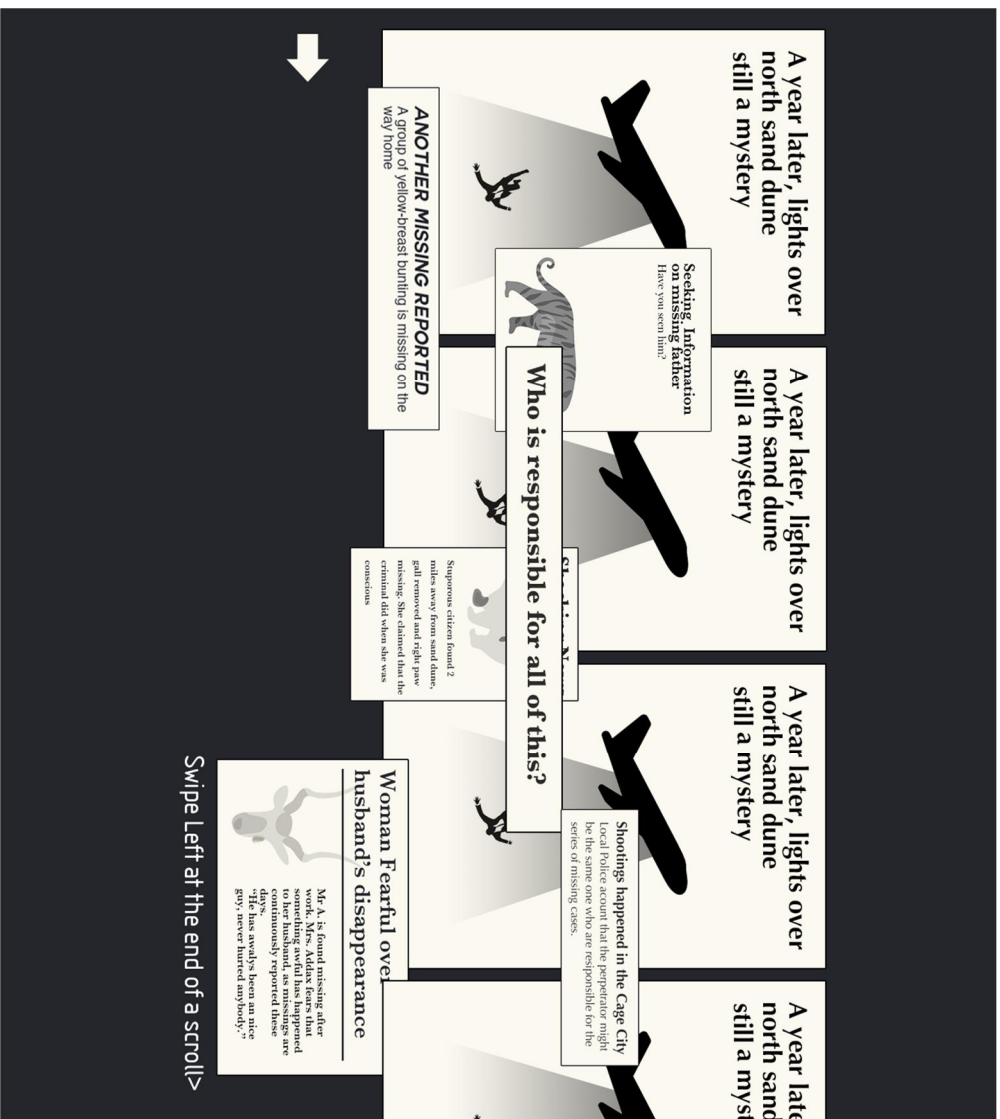
Stuporous citizen found 2 miles away from sand dune, gall removed and right paw missing. She claimed that the criminal did when she was conscious



Shootings happened in the Cage City

Local Police account that the perpetrator might be the same one who are responsible for the series of missing cases.

Swipe Left at the end of a scroll>







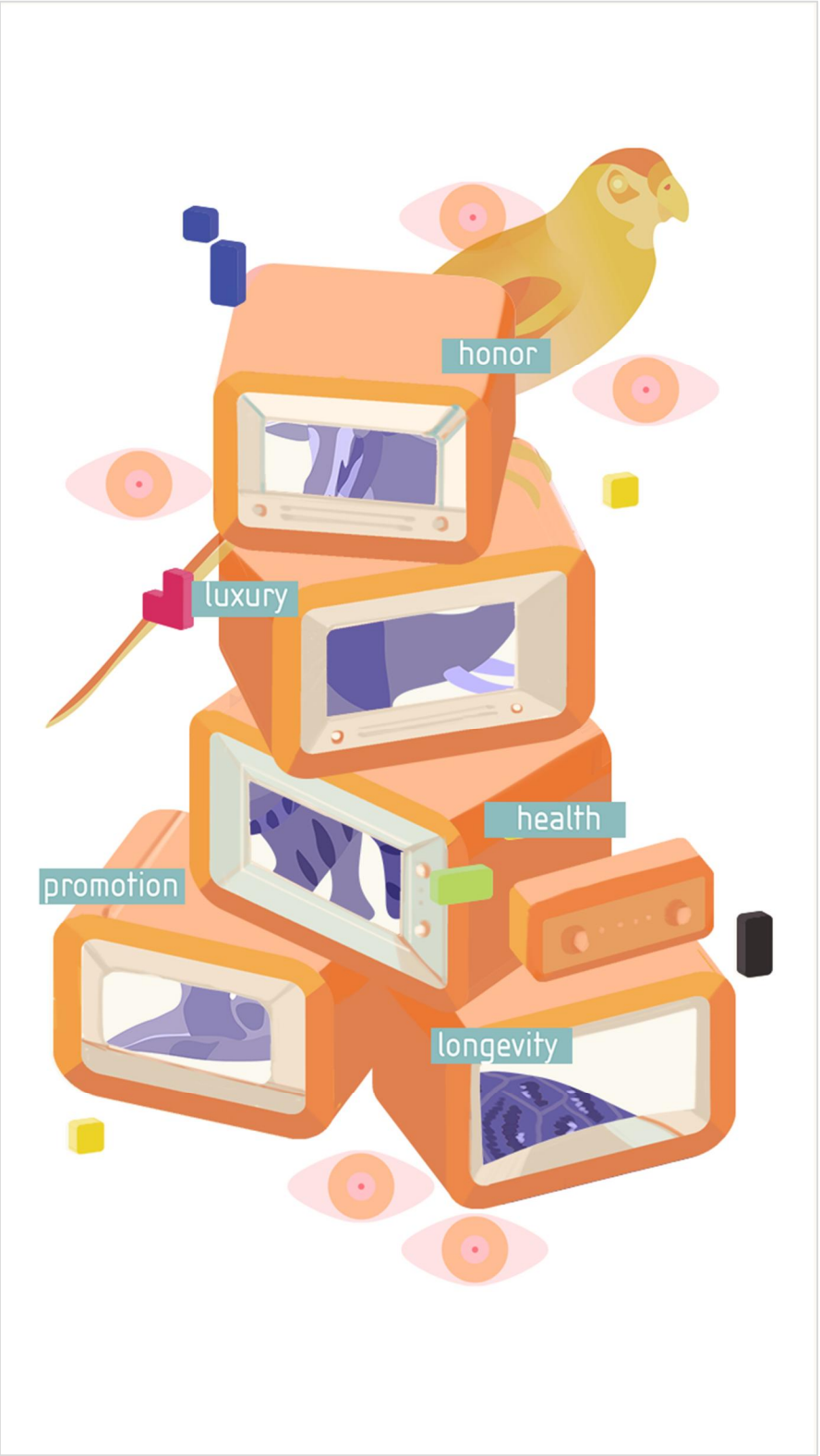
*

I am personally not attracted by these.
They are special enough for me.
Could you find something better?



*

"Your ruby worth a lot. I'll take
you to the friends who can make
exquisite artworks.







*

"These friends work hard
to provide the energy we need.
Do you want take some from them?"



Status





*

No..Our hearts are made of the thing we
find beautiful.
We call them soul.

*

I think I fell in love with your place.
All your friends look and taste amazing.

*

They will be special and unique in my
world, even they are not alive.

*

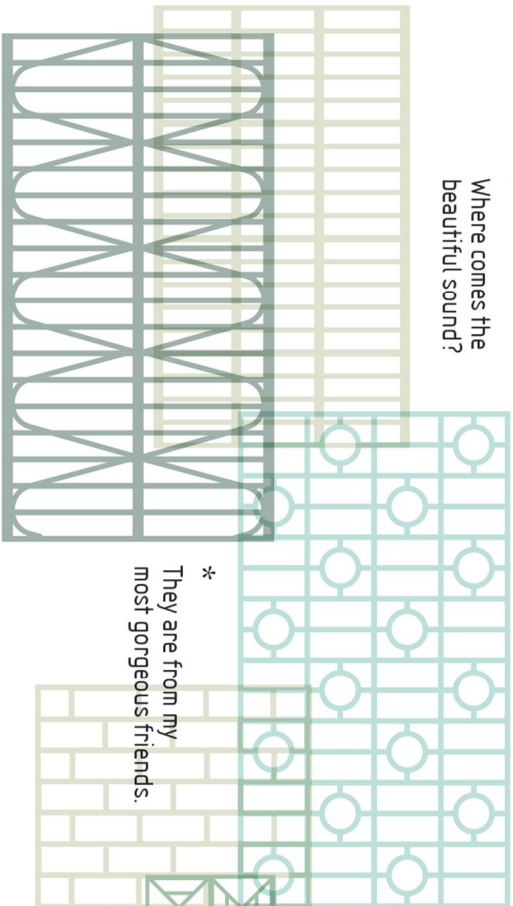
If you could find me a
beautiful heart,
you could have my old one as gift.

*

It's made of diamond.
They used to be expensive,
Now there is nothing more expensive
than your friends.

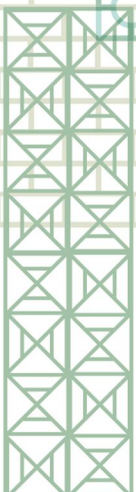
Take it!

*
Where comes the
beautiful sound?



*
They are from my
most gorgeous friends.

*
Here is where they live.
The Caged City.





start to shoot

*

They are hard to catch.
I'll shoot some of them for you.
Give me your heart first.

*

They are the symbol of freedom.

*

They are amazing.

*

Here we are.



start to shoot

*

They are hard to catch.
I'll shoot some of them for you.
Give me your heart first.

*

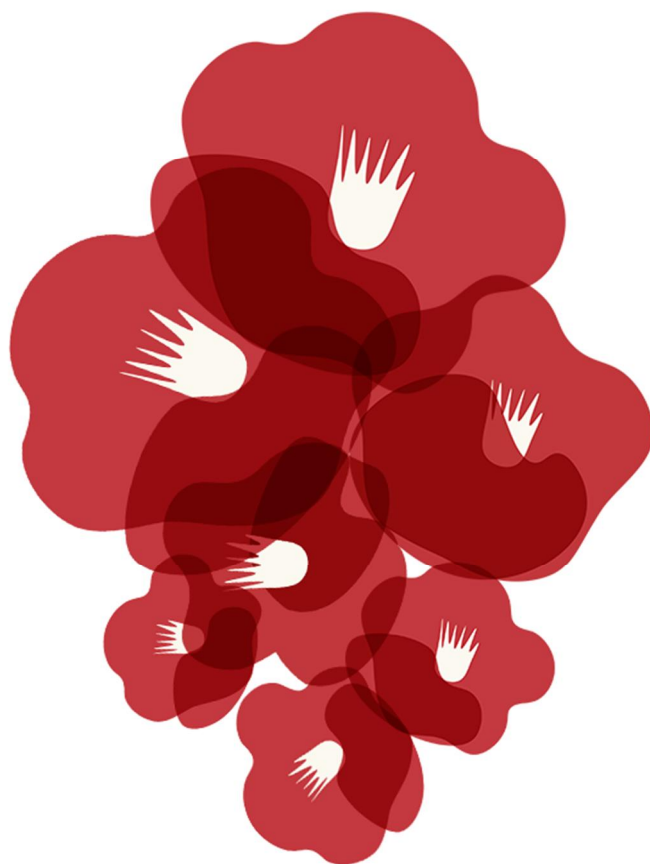
They are the symbol of freedom.

*

They are amazing.

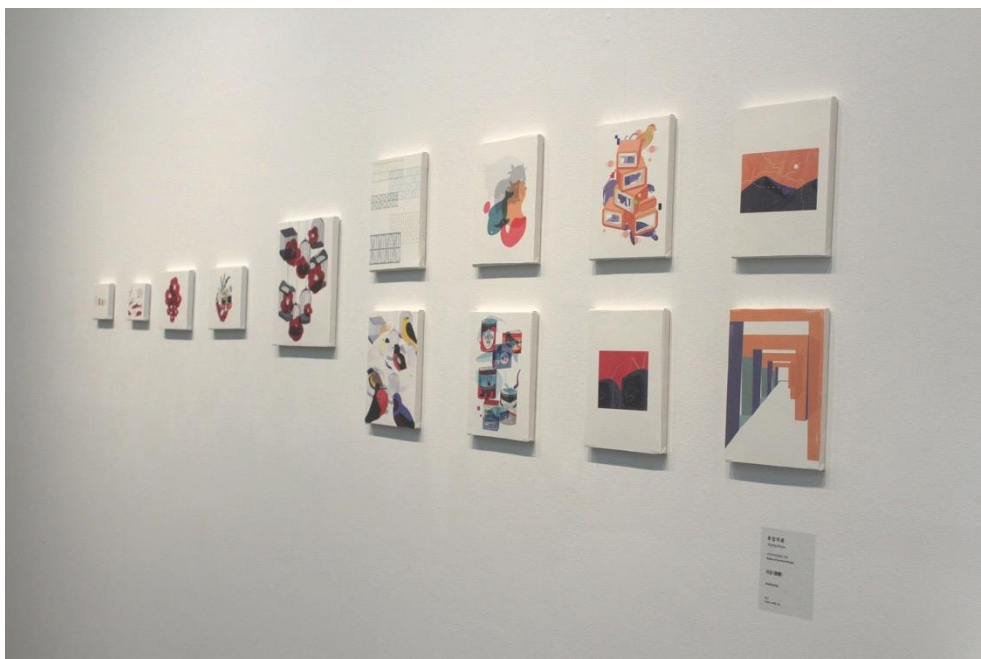
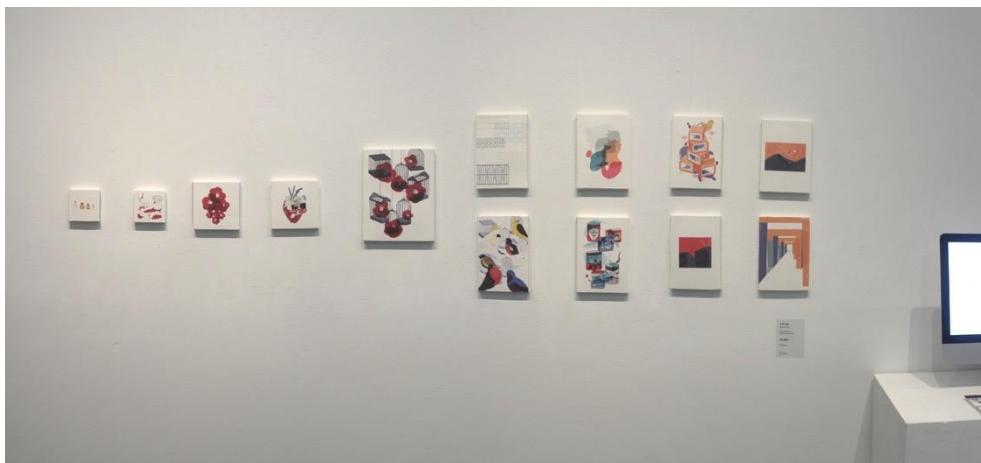
*

Here we are.



I have a beautiful heart now.
Thank you.

5.6 Final Exhibition



<Figure 5-40> Exhibition photos



<Figure 5-41> Exhibition photo

Chapter 6. Conclusion

6.1 Summary

Different studies and news have proved that China has been the largest import country in the illegal wildlife trade. With a long history and traditional culture of trading and using wildlife products, the Chinese culture has resulted in people's low awareness of reducing the demand of consuming endangered wild animals. With the purpose of raising users' awareness, this design proposal targets at Chinese users who are in their middle childhood (9 to 12 years old) and tries to encourage these users to think independently about illegal wildlife trade issues and reduce the culture and social influences that increase the wildlife products consuming demands on this age group's users.

In response to the increasing level of illegal wildlife trade over the last several decades, efforts from perspectives are made by different organizations, institutes, groups, and individuals. One of the efforts is to reduce the consumers' demand for illegal wildlife products. The efforts to arousing public awareness are often made in communication and education field. Among all the media, interactive books can introduce the animals and animal-related issues from education, aesthetic and humanity aspects, and are fun, visually impressive and rich in information. Furthermore, books on mobile devices are easy to publish and share, which makes them the ideal media for individual and non-profitable need.

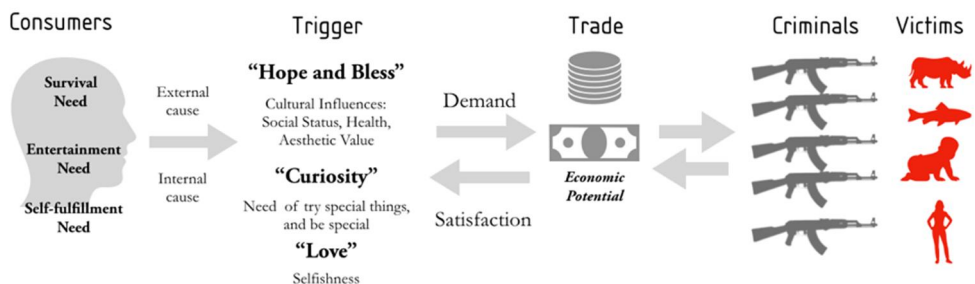
The study focuses on smartphones, as they are light-weight, portable, and are used frequently in the fragment time. The story with animal protection education contents is often promoted in the scenarios like visiting museums, zoos or viewing advertisings. In those scenarios, users can use mobile devices to access the story contents easily by using smartphones.

The narration is a story about two characters and animals. The goal of the narration is to discuss the motivation behind the consuming and hunting through the story between two characters.

The interactive features of the interactive book could be divided into 4 categories:

- 1) Voice narration and Sound effects: the users could listen to the voice narration of the Visitor character, and the song of flute which indicates the voice of the Man character. The user could tell the different stages of the Man characters from the tone of the sound.
- 2) Animations: different animations could be controlled by tapping and device move, which enhance the level of involvement between the user and the scene.
- 3) Game features and Information features: Three main scenes are designed for each topic, where the users could spend more time reading the additional information units in a non-linear fashion, and understand the information through the game features.
- 4) Reading Experience: Different page segmentations create the rhythm within the picturebook and the sense of continuity or progress, which enriches the reading process and enhance the level of fun.

The main idea of this story could be summarized into this graph:



<Figure6-1> Main Idea

The story mainly talks about the idea that the consumers inner needs will be triggered by external and internal causes and turned to different kind of demands which lead them to participate in the process of the illegal wildlife trade. The demand will keep increase if people are not aware off the causes and results in the growing economic potential of this illegal trade which lead to the increasing number of criminals and the victims.

The Visitor and the criminal works as archetype and shadow, through the interactive features, the user could participate in the story in the role play process. During the role play, the user will act as three characters in the same time: The Visitor, the Man and as the user self. This kind of interaction keeps a certain distance between users and the story, which enables them to think about rationally and critically about the story itself and their own experiences.

To sum up, this design is summarized in the following three aspects:

- 1) Animal protection : Focus on the people involved in illegal wildlife trade. Help readers to understand the motivations of the consumers and criminals. Inspiring people to think about resolutions from the aspect of people, culture, and society.
- 2) Education: Encourage Readers to think independently through the story by not giving the direct right or wrong. Encourage them to think about what they should do.
- 3) Interaction on mobile devices: Combined book design features, filming features and mobile phone reading features to design the mobile phone-based reading experience.

6.2 Limitation

This design thesis has some limitations because some of the important process could not be able to include in this study.

Firstly, the design was not able to be implemented with Xcode and publish on App Store, and the prototyped version was also not tested by the targeted users. The opinions given by the target users were meaningful for the improvement of this design.

Secondly, some platforms like tablet PC and the public interactive touch screen was not able to be included in the research process.

6.3 Further Discussion

Based on this proposal, several points were left to be discussed. Firstly, the improvement of the book-reading experience by taking reference from the mobile web design and app design is worth discussion, as many of the smartphone users are spending much more time reading the website or social networks like Twitter or chatting application than reading e-books without feeling distracted or bothered.

Cognitive studies focus on the improving the reading experience on different devices could be re-think from the perspective that different contents and the form of contents may need a different experience.

Secondly, developing a tool for creative multimodal writing is also a topic that worth further discussion. Prototyping software, simplified code language, and graphical programming made it possible for designers to create vivid prototypes for apps. Prototype written in codes could also be shared and co-worked

easily. Developing tools that enable writers and illustrators to create multimodal narration and share them with ease would make it possible for the enrichment of interactive books and encourages authors to create their stories in the fully interactive environment.

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U.S. Fish& Wildlife Service,

<https://www.fws.gov/international/travel-and-trade/illegal-wildlife-trade.html> (Visited 2017/11/5)

Tom Johnson, How to design documentation for non-linear reading behavior

Korean Abstract

중국은 불법 야생 동물 거래 시장, 야생 동물 거래 역사, 그리고 야생 동물 제품을 거래하는 전통적인 문화를 가지고 있다. 이 문화때문에 사람들은 멸종 위기에 처한 야생 동물을 소비하는 수요를 감소시킨다는 인식이 약하다. 이 디자인은 9 세에서 12 세까지 중국 사용자들을 목표로 불법 야생 동물 거래에 대해 독립적으로 생각하도록 권장하고 이 연령대의 사용자들에 대한 야생 동물 소비 수요를 증가시키는 문화 및 사회적 영향을 줄인다.

그 목적을 달성하기 위해, 이 연구는 네 가지 단계로 진행되었다.

첫째, 야생 동물 거래의 사실과 동물의 가치와 인간의 심리적 필요에 대한 관계를 바탕으로 고무적인 콘텐츠를 개발한다.

둘째, 대상 사용자 그룹에 알맞은 멸종 위기에 처한 동물 정보를 선택한다.

셋째, 상징적인 요소와 추상적인 시각적 표현으로 복잡한 내용을 창조하여 감정적 개입 정도와 내용과 사용자 사이의 거리를 결정한다.

넷째, 그림책에 리듬을 만들어 내고 재미 수준을 높이기 위해 읽기 경험을 디자인한다.

이 디자인제안통해서 사용자들은 소비자와 범죄자의 동기를 이해할 수 있고 문화, 사회적 문제도 이해할 수 있다.

키워드:전자책, 그림책, 대화형 그림책 디자인, 스토리텔링, 동물 보호
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